AMERICAN BEE JOURNAL

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"Honeydale," the Southernmost Apiary in Texas

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BEES IN THE LOWER RIO GRANDE VALLEY

The First of a Series of Articles on Texas Beekeeping by Frank C. Pellett

TEXAS is a wonderful State with a great diversity of soil and climatic conditions, and with history and traditions peculiar to itself. The naturalist, the botanist, the historian, or the student of beekeeping or other agricultural specialty, can find within the State material for years of investigation. For a stranger to undertake to catalogue its resources, after a brief investigation of about two months, would be but to outline his own limitations, for Texas is too big to be contained within the grasp of any individual.

In order to appreciate the vast stretch of country called Texas, one must study the map of our country and note something of the variety of climate represented within its borders. Orange, Texas, is very nearly south of Des Moines, Iowa, while El Paso is farther west than Denver, Colo. The northern line of the State is close to southern Kansas, while Brownsville is a long distance south of San Diego, Calif. One might spend a lifetime in one section of Texas and have little idea of the State in general. The casual traveler who visits one corner of the State and comes back to tell you about Texas, may describe an entirely different country from that seen by the visitor to another part. One can describe almost any condition of soil or climate with which he is familiar in any part of the United States, and say with truth that it is like Texas for almost every condition of soil or climate of the rest of the country is to be found somewhere in Texas. The climate ranges from a winter temperature of some twenty degrees below zero in the panhandle, to an almost frostless condition in the Rio Grande valley. In east Texas, there is a heavy annual rainfall, with a consequent luxuriant vegetation, while in parts of west Texas one finds a desert flora and little rain. At one point we were told there had been no rain for eighteen months, and from the appearance of things we could readily believe it.

When it came to planning a trip to see typical conditions in every honey producing section of Texas in two months, numerous difficulties presented themselves. The job was too big for the time available. Prof. Paddock, the State Entomologist, outlined the trip from beginning to end, and it is doubtful whether it could have been planned better. Numerous well-known beekeepers were missed, and it was not possible to spend as much time as was desirable in some sections, but train schedules, distances to be traveled and opportunities in other places, all had to be considered.

Either W. E. Jackson, chief Bee Inspector, or Prof. Paddock, State Entomologist, accompanied the writer for the entire trip. E. G. LeStourgeon, manager of the Texas Honey Producers' Association, and H. B. Parks, of the Extension Department, also were with the party on part of the journey. At some points, three or four auto loads of local beekeepers would join us for a trip to the country, to visit the apiaries and study the honey plants. The informal discussions of bees and beekeeping, ranging from hive stands to honey flows, were most interesting, and the impromptu field meetings in the various apiaries were very enjoyable. Looking back on such a journey and remembering all the interesting places visited, the many new acquaintances made and the various in-

Fig. 1—Grant Anderson, of Rio Hondo. In many parts of the valley the bees must be lifted off the ground to guard against floods

Fig. 2.—Semi-tropical vegetation near Brownsville, W. E. Jackson, chief bee inspector in the foreground

cidents along the way, it is hard to decide what is best to fill the limited space in the Journal that can be spared each month to tell about Texas beekeeping. Just to tell about the beekeepers themselves would be worth a volume, for in Texas, as elsewhere, there are many fine personalities among the beekeepers. As the limitation of time made it necessary to miss many interesting places and well known beekeepers, so the limitation of space makes it necessary to omit mention of many interesting incidents in this series of articles.

The Rio Grande valley is the southernmost section of the United States, except for the extreme tip of Florida. As far as beekeeping is concerned, we found conditions in the valley very different from those of any other section of Texas. In fact, Texas seems to be divided into about five natural divisions, as far as honey production is concerned. Each of these divisions has a flora and season peculiar to itself. Moving from one of these sections to another, one would have about as much to learn as though he came from a distant State. The Rio Grande valley has a light flow from one source or another, through most of the year. Several beekeepers told of having swarms as late as December, that gathered sufficient stores to winter successfully. The sources of honey are quite different from those of southwest Texas, where everything that grows has a thorn on it, and where the rainfall is extremely light. The southwest section will be treated in a separate article. North of San Antonio we find another natural division, where cotton becomes the principal source of surplus. The line is well marked, and south of there we were unable to find any beekeepeers who reported cotton as important. The soil seems to determine the flow from this plant. The cotton belt will also be treated in a separate article. East Texas again is a different country entirely, and again demands a separate article. The time was too short to permit the party to visit the panhandle or the high plain country of northwest Texas, so that must be left for a later visit.

The Rio Grande valley, with its mild climate and fertile soil, only requires water in sufficient quantity to become the garden spot of Texas. A small portion of the valley is capable of irrigation, and some of the irrigated tracts show wonderful results. Land sharks take advantage of the attractions of the country, and prey upon the unsuspecting homeseeker from the north. These are mostly northern men with headquarters in some northern city, who live by taking advantage of their trusting neighbors. There are many opportunities in south Texas, but the poorest way in the world to find them is by joining a land-seekeers' excursion and buying from a company. A man who has played the game for eight years confessed to me that they never handle anything for less than a hundred dollars per acre margin. The man who dreams of a home in south Texas should visit the country and get his information from the residents. Few of the people living there will be inclined to deceive him. I heard the native Texans often deplore the way the northern buyer was being "skinned" by the northern land men, and saying that it was having a bad effect on the development of the country.

The valley is subject to extremes of wet and drought. One cannot depend upon the natural rainfall. While the records show an average annual rainfall that would indicate the possibility of profitable cropping, the distribution is uncertain. There may be heavy rains which flood the whole country, and then no rains for months. The country is very level and, sometimes, is flooded for many miles. It, accordingly, becomes necessary to keep the bees off the ground over most of the country. Only here and there is a natural rise high enough to be safe in time of extreme high water. (See Fig. 1.)

Fig. 3.—A. Lynn Stephenson and a clump of cactus in his pasture

The variety of flora is extremely interesting. Figure 2 shows a semi-tropical vegetation to be found near Brownsville. In the valley one finds both the desert flora and the valley flora, so that there is a great variety of bloom with something open for the bees every month in the year. The first beekeeper visited was A. Lynn Stephenson, proprietor of the Honeydale apiaries. Our cover pic-

Fig. 4.—The Huisache furnishes plenty of early pollen in the Rio Grande Valley

ture shows his home apiary, which is probably the southernmost apiary in Texas cared for according to approved methods. There is a Mexican apiary a mile or so further south, but it is primitive in the extreme and will be described in another article.

The Stephenson apiary is under Texas ebony trees. These are unlike anything to be found further north. The tree is evergreen and blooms several times during the year. It is a legume and bears beans like the locust pods. *(Siderocarpus flexicaulis.)* It is important for nectar.

Mr. McDonald, the county agent, and Mr. Stephenson both put their time and their cars at our disposal, so there was the finest chance, not only to see everything worth while, but to obtain information at first hand. It was February, and everything at home was in cold storage. Mr. Stephenson picked some fine strawberries and sent to our hotel at home when coal was at a premium at home, and the thermometer registered 15 or 20 degrees below zero. At that time the bees were working freely on the hackberry and bringing in considerable nectar. The Huisache, pronounced "wesache," was also blooming and furnished pollen in abundance. Many of the plants in that section have Mexican names and the h has the sound of w. There was also a species of mint blooming which furnishes considerable honey some seasons.

Driving to Rio Hondo, we visited the apiaries of Grant Anderson, which are situated on the banks of the Arroyo, a salt water inlet from the Gulf of Mexico. Mr. Anderson uses a motor boat in traveling to and from his outyards, as described in the Journal some months ago. In even this short distance of about twenty miles, there is quite a difference in the flora. At Brownsville they have a number of plants not found at Rio Hondo, and some at the latter place not found at Brownsville. It certainly behooves a beekeeper to know his locality in Texas. At Mercedes there are a number of good beekeepers who gave us much information about the conditions peculiar to the valley. Claude Armstrong reported the largest average of surplus of which we heard in the valley. He reported that in an average season he had secured as much as 75 pounds per colony in outyards.

L. LaRue considers 40 to 50 pounds a very good yield in his locality. J. D. Kennedy considers 50 pounds as about an average for him. These were rather better reports than were found in other parts of the valley.

At first thought, one would expect this valley to offer a bonanza location for the honey producer, with its great variety of honey flora yielding something practically every month in the year. After looking the ground over, however, one discovers that the brood-rearing season is continued correspondingly, with the result that most of the honey gathered is consumed in brood rearing during the portion of the year when there is little surplus stored. In February, we found the bees in the Honeydale apiary were strong enough for shaking for increase, filling packages, or any other desired manipulation. They apparently averaged about as strong as would be the case in Iowa the middle of May to June 1. It seemed to be the consensus of opinion of the beekeepers in the valley, that the surplus would not average to exceed 25 pounds per colony for a series of years.

After visiting many beekeepeers and asking more questions than four small boys, we were impressed with the fact that the Rio Grande valley is the finest place in America for breeding bees, but rather a poor location (except in a few favored spots) for honey production. It would be possible to fill orders for queens or packages of bees a month to six weeks earlier than in Alabama or Mississippi. Then one could rear queens and mate them successfully for at least ten months in every year and, some years, for the entire twelve months. W. H. Laws, of Beeville, has established some queen yards in the valley, in order to be more independent of poor seasons, and also to add several weeks to the length of his queen-rearing period.

Cactus, commonly called prickly pear, or just "pear," is very common everywhere. It grows in clumps often as high as a man's head. It yields some honey and an abundance of pollen. Apparently, it is of much greater importance in some other sections than in the Rio Grande valley. Beside the cactus, the wild land is covered with a scrubby growth of thorny bushes, such as mesquite, catclaw, etc. It is difficult for one to walk about through the growth, for although it is not so very dense, the thorns catch in one's clothing and scratch one's flesh. After the first day that a stranger spends walking about in the chaparral, as the bush is often called, he spends most of the night following in scratching for chiggers and ticks. After a time he becomes somewhat immune to the attacks and also learns how to rid himself of the pests.

About 90 per cent of the country is still in the wild, and will be for a long time to come.

Fig. 5.—Rents are not high in the Mexican villages of South Texas. Because of the mild climate, the peons build houses much as the birds build nests, of such material as is ready at hand.

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.
FRANK C. PELLETT, Staff Correspondent.

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THE EDITOR'S VIEWPOINT

Foulbrood Kill or Cure?

The appearance of friend F. Dundas Todd's article on pages 161-3 of our May issue, sustaining the method of applying fire for the destruction of foulbroody colonies is giving rise to vehement protests. A subscriber asks whether we approve of this method. We do not. Then why did we insert it? Because our friend of British Columbia has a very forcible way of disease might bring it again. If his isolated location, it may be safer to destroy the few cases of the disease found, although one might suggest that the same cause that brought the disease might bring it again. If he followed this method to a finish he would not do for a physician. If you had smallpox or some other contagious disease, he would probably bring you a revolver and a coffin and demand that you put an end to the danger of contagion by self-destruction.

We kept bees some 40 years without seeing a trace of foulbrood anywhere. Then all at once we found it pretty well disseminated in our apiaries. That was some 10 or 12 years ago. Had we followed friend Todd's method we would probably be out of the bee business by this time. Instead of that we cured the disease and in 1916 harvested a record crop of 125,000 pounds of honey.

If you are a careful beekeeper, reader, and find foulbrood among your bees, do not get frightened, but follow the directions for treatment given everywhere by inspectors and writers. But if you are careless and hesitate to follow instructions, better do as Mr. Todd suggests, build a big bonfire and destroy that which you do not have the courage to cure.

Fabre and Parthenogenesis

An enquiring subscriber wants to know whether parthenogenesis can be accepted as an established fact, in spite of Fabre's condemnation of it, just because of the editor's experience with unfertilized queens. (See page 156 of the May number.)

We understand the implied criticism and would not expect a novice to accept our assertion without further proof. We might have given this in the May number. Here it is:

There are hundreds of queen breeders who have had experience with drone-laying workers. Many other beekeepers have also found them in queenless hives. Each of them is an evidence of parthenogenesis, for the drone-laying worker is an undeveloped female who has only rudiments of ovaries and an atrophied spermatheca. The fact that she can lay eggs that hatch, without her having been previously mated, is sufficient to affirm the Dzierzon theory. The word "Parthenogenesis" is composed from two Greek words meaning "reproduction from virgin." The drone-laying workers cannot be anything but virgins, since they are incapable of mating.

In the present number will be found an article from our learned Scotch, friend, John Anderson, M. A., which reproduces the assertions of two scientists that some African bees have laying workers whose eggs hatch as workers, queens or drones. Either those so-called workers are capable of mating, or they are not. If they are, then they are really fully developed females. If they are not, and cannot mate, then they give additional evidence of parthenogenesis, though with a variation in the result.

As no evidence of the production of anything but drones from the eggs of laying workers, in the European races, Black, Carniolan, Caucasian, Italian or Cyprian, has ever been given, we must needs be content with the Dzierzon theory, against which so many arguments of all shades have been used.

In a nutshell, this parthenogenesis may be described as follows: The queen and some workers may lay eggs that will hatch without previous mating.

A Notable Work on Honey Plants

H. B. Parks, who has lately moved from Missouri to the Texas College of Agriculture, has completed the most thorough survey of the honey plants of Missouri as yet undertaken in any State. The work was done under direction of Dr. L. Haseman, the State Entomologist who has direct charge of all work in beekeeping in connection with the Missouri institution. Mr. Parks spent much time in field work in various parts of the State and has mapped the flora of Missouri relative to the occurrence of the various honey plants.

A study was made of 225 native and introduced species as to range of the plants, blooming dates and object of the bee visits, whether for honey, pollen or propolis.

There is great need that such work be done in every important honey-producing State, and Missouri is to be congratulated upon being one of the first to complete the survey of her nectar-bearing resources. It is to be hoped that the authorities of the university will see fit to publish the manuscript without delay, as students of similar problems in other States are hampered for lack of references. Its appearance will be awaited with interest.

The Greiner Brothers

We take pleasure in giving to the readers of the American Bee Journal on another page, pictures of two men who have been constant readers and contributors of the Journal for over 20 years. Messrs. Greiner are both methodical, careful and neat men. They have been successful and are always willing to explain their methods, which are the result of long years of practice. (Editor.)

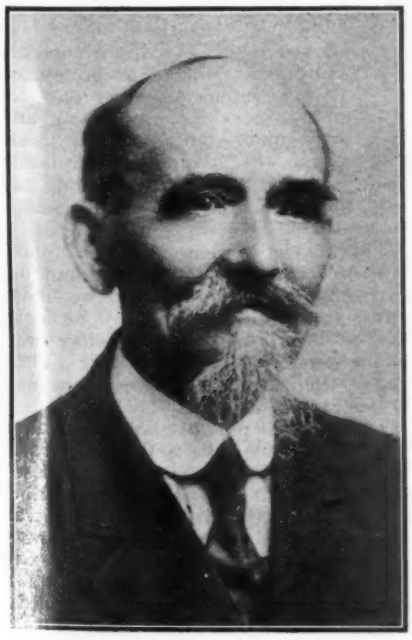
REMINISCENCES OF EARLY AND LATER DAYS

Recollections of One of New York's Best Beekeepers Since Beginning With Bees

By G. C. Greiner

THE earliest recollections of my beekeeping activities date back to my schoolboy days, when a small lad 8 or 9 years old, in the early fifties. In the city of Bernburg, the capital of Anhalt, with about 15,000 inhabitants, I was by chance introduced to the joys and woes of my earthly existence.

In a small garden, back of a row of closely-built city blocks, grandfather kept in a roughly built shed, from 8 to 10, sometimes as many as a dozen colonies of bees. They were all in the customary straw skeps, the same as all beekeepers used at that time. The usual way and the only possible chance of gathering up the season's surplus crop, was by tipping the skep to one side, driving the bees by means of the blowpipe as much as possible from one of the side combs and cutting this with a long hook-shaped knife from its fastenings. The part I generally played in this operation was to hold the pan while grandfather filled it with what we would call at the present day chunk-



G. C. Greiner

honey. Sometimes it would also fall to my lot to hold, and even use, the pipe when grandfather's hands were busy holding the skep and cutting the honey. It always raised me several notches in my boyish estimation to be called upon for such important assistance.

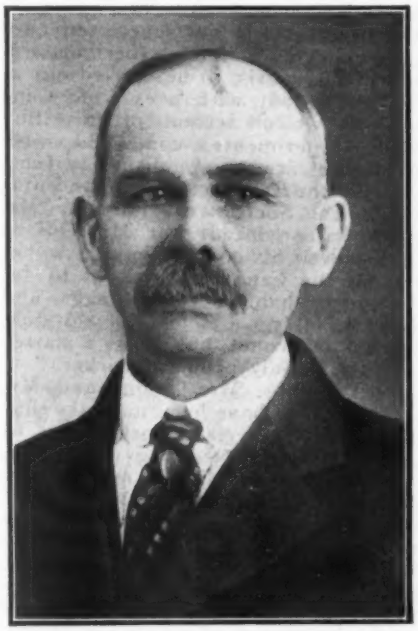
One episode of those early days left indelible marks on my memory even to the present day. I was yet a mere child when grandfather hired me for "einen silbergroschen (about 3 cents) to get one of those straw skeps from a beekeeping friend who was village teacher about two miles distant from our city. To carry the skep easily, grandfather rigged me up some straps, knapsack fashion, and encouraged by the silver coin, which looked like a fortune in my eyes, I started on my mission. At first, when I started from that village on my home trip, the skep was not much of a load, but it soon began to grow heavy, and the farther I went the heavier it grew, and before I had covered half the distance the load becoming too much for my yet tender constitution, I caved. I do not now remember how my venture finally terminated, but I have a very faint recollection that the hired girl was sent to meet me and assist me home after I had failed to return in proper time.

From the time I left school until 1875 nothing of a beekeeping nature, nor anything of great importance transpired in my life's career, except that in 1862, rather than waste three years' service in the German army, I landed on the shores of this great and glorious republic. At that time I had not the slightest idea that keeping bees and producing honey should ever become the means of earning my daily bread and butter. In fact, I had never heard that the beekeeping industry could assume such paying proportions.

Having had several years of practical experience on one of those large sugar beet farms in Germany, I intended to follow agricultural pursuits for my main dependence in this country. At first this proved a paying investment. During the civil war all farm products had risen to unheard of high prices, which reached their highest pitch just before and after peace had been declared. But things changed quite materially when the discharged armies came home. The large armies of consumers turned into armies of producers, and in a short time a reaction in the prices of all farm products took place. They dropped from year to year; lower and lower they went, until they reached the lowest ever known, and consequently farming did not pay any longer.

About that time I began to look for an opening of a better paying occupation, and an opportunity presented itself in the following way: In 1875 it happened that a neighboring farmer had purchased from a traveling agent, a town and county right for a certain beehive, similar to the jumbo pattern, and intended to engage in its manufacture for his own use as well as for the trade. As I was at leisure during that winter, and somewhat mechanically inclined, this neighbor engaged me to manufacture his hives. This work suited me so well that by spring, in partnership with my younger brother, F. Greiner, we secured by mutual consent the interest in the manufacture and sale of the above mentioned beehive and prepared to conduct that business as our exclusive occupation. It also happened that my brother, who had come to this country a few years previously for the same reason I did, was a natural born beekeeper, and as part of our season's work consisted of transferring bees for our customers, his natural inclination in that direction proved a valuable acquisition to our business career.

In spite of the fact that we were entirely destitute of any beekeeper's experience, we succeeded from the very first beyond our expectations. Our hives found ready sale and the following seasons favored us with bountiful honey crops. Thus things went along to our complete satisfaction until the disastrous winter of 1880-81, which swept most of the bees in our territory out of existence and blasted all our hopes. It wound up our hive trade, as it seemed, for all future time. But, fortunately, the



F. Greiner, of New York State

honey crop of the following summer from our own bees that we had left, was an unusually heavy one, which induced us to continue the production of honey as a livelihood for the future.

A little later family conditions made it desirable to change my home from Naples to La Salle, which made it necessary to sever our business connections, each one of us continuing our business on private lines at our own homes. Since then, my brother has followed up Mr. Hutchinson's theory of "more bees," while my ambition has taken for its aim

"more surplus yield," and that we both have been reasonably successful is proven by the fact that my brother owns from two to three hundred colonies, while my average yield has been in late years about $20 per colony, spring count. This, however, does not include our last season's crop. All beekeepers know that, with a few local exceptions, we had almost a complete honey failure all over the United States.

La Salle, N. Y.

Laying Workers Which Produce Female Offspring

By John Anderson, M. A., B. So.

IN Dr. Phillips' Beekeeping (1915), there are two references (pp. 187, 203) to a paper by Mr. G. W. Onions in the Agricultural Journal of South Africa for May, 1912. Mr. Onions asserted that, among Cape black bees, laying workers occurred very frequently and from their eggs drones, workers and queens were produced. This extraordinary claim seems to have attracted little attention at the time except that one or two Cape beekeepers wrote refusing to believe the story. Mr. Onions, however was not discouraged, and when he removed to Rhodesia he sought the help of the Division of Entomology at Salisbury. Mr. R. P. Jack, F. E. S., undertook the superintendence and checking of fresh experiments in parthenogenesis, to be carried out at Salisbury, but with bees from Cape Colony. A full account of those further experiments, conducted with scientific care, was published in June, 1917, in the Transactions of the Entomological Society of London. Mr. Jack is convinced that Mr. Onions has proved his conclusion that workers of the Cape bee "are apt to develop the habit of laying eggs, and that these eggs may produce workers, queens or drones, but do, as a matter of fact, mainly produce workers."

Dr. Phillips, Mr. Onions and Mr. Jack seem to have been unaware that the power of certain worker bees to produce female offspring was noted, and the facts published, many years before the appearance of Mr. Onions' first paper in 1912. The oversight is pardonable in the case of Phillips, Onions and Jack, because such recent writers could hardly be expected to know that valuable papers on beekeeping used to appear in the Journal of Horticulture, published at London and edited by Robert Hogg, LL. D., F. L. S. English contributors to the Journal of Horticulture included Cheshire, Woodbury, Hewitt, and the two Carrs, while among the Scottish writers were Pettigrew, Thomson, Raitt and McPhedran. Every one of these writers made additions of permanent value to our knowledge of beekeeping, though, with the exceptions of Cheshire and "W. B. C.," their names are scarcely known to the present generation of British beekeepers.

John Hewitt, of Sheffield, England (and his name ought to be mentioned with those of Schirach, Huber, Dzierzon and the other great masters) made his observations on laying workers more than 30 years ago, and published a brief account of them in the Journal of Horticulture for 1892 (August 11, page 134). It was, perhaps, fortunate that the Journal of Horticulture was not exclusively a bee journal, and that Dr. Hogg was broad-minded enough to realize that perhaps, after all, Dzierzon had not said the last word on parthenogenesis in the bee. When Hewitt attempted to make his discovery known through the bee press of Britain and America his main conclusions were either suppressed or covered with ridicule. No discoveries might be published which would not fit into the Dzierzon theory. It is thus only by a kind of accident that we can establish priority for the original discoverer of an unsuspected peculiarity in the workers of certain races of the honeybee.

European bees, with which alone Dzierzon was familiar, have one marked defect in their otherwise perfect arrangements for preserving the continuity of the stock. At the time when a virgin queen is ready to be mated there is no other queen in the hive (except perhaps in supersedure) and there is no means of making one. The virgin is the sole hope of the stock, and if she be lost or fails to mate, that stock is doomed.

Hewitt had been working with Punic or Tunisian bees, which he had imported direct from North Africa, and found to differ greatly from the bees of Europe. For example, a stock which had lost its virgin on her mating flight, promptly developed laying workers, and raised queens from the eggs of those workers.

"In one case a number of Punic workers entered a stock of queenless Carniolans and reared a queen from the eggs they laid. This queen is now in the British Museum." (1892.)

It is clear from the narrative that Hewitt had been familiar with the facts for some considerable time, and that his object was to get others to verify observations, of the accuracy of which he entertained no doubt whatever. He proceeds to give directions for inducing Punic bees to rear queens from the eggs of laying workers. The aim is to reproduce as nearly as possible the conditions of a stock that has lost its queen on her mating flight. It must be queenless and broodless with some drones present.

"The bees will soon be busy laying and rearing queen cells. If any of these seem natural, that is not long ones, but just like ordinary queen cells, queens will most certainly be found in them, and not only so, but numbers of worker bees will hatch from worker cells. Hence Punic worker bees have the power to raise both queens and drones from themselves. The instinct seems perfect in the Punic bees; only partly so in Syrians, and it is quite absent in our native bees. I cannot go into the matter just now, but should like as many as possible, who have those bees, to confirm my discovery, incredible as it may seem."

From these quotations it is quite clear that Hewitt had made the greatest discovery in the natural history of the bee since the time of Dzierzon, and that he anticipated Onions by at least 20 years. The bees of Africa are probably nearer to the ancestral stock, and the workers still retain the power of reverting to the primitive condition when every female was a potential mother. Hewitt's remark that the power is less perfectly developed in the Syrian bee and totally absent in native bees, is highly significant. Dzierzon and his co-workers, being acquainted only with the more specialized bees of Europe, had no chance of making this discovery, and made the very usual mistake of generalizing from insufficient data.

Meantime only the barest facts are mentioned, but it is evident that a new vista has been opened up, and that we must now consider parthenogenesis in the honeybee from quite a different standpoint.

Agricultural College,
Aberdeen, Scotland.

Co-Operative Selling Pays Texas Honey Producers

By Chilton Gano

(Concluded from last issue)

THE story of how poor market conditions for Texas honey led 79 beekeepers to meet and decide on co-operative marketing, and how an immediate result of their uniting was the advance of wholesale honey prices 2 cents per pound, was told in the last issue of American Bee Journal.

This price advance took place within six weeks after they had organized, indicating that the mere news that things were to be conducted in a more businesslike way had a good effect on the trade. Then began the work of putting their plan in operation.

The prime purpose of the move was to improve the selling methods. The first step was to adopt an association label. The Lone Star label shown in the illustration was adopted. Six sprays of flowers surrounding the central design are the chief honey plants of Texas, namely, guajillo, catsclaw, mesquite, alfalfa, horsemint and cotton. The blank space is for the kind of honey, comb or extracted, and for a number representing the apiarist who packed it. The Association announced that honey bearing this label is guaranteed, will be distributed at uniform prices, and will be in every way standard.

Instead of establishing an extensive official inspection system to protect the label's good name, the Association withholds a part of the price from the beekeeper until time has been allowed for the purchaser to enter any complaints. This results in the producer being paid as follows: 50 per cent of the value of the

honey, at the current market price on day bills of lading are received; 50 per cent of remaining amount 30 days later, and final settlement within 90 days.

To further protect the purchaser, each member must sign a statement in triplicate to be attached to all bills of lading, guaranteeing that his honey is packed in accordance with Association grading and packing rules, and that he will be responsible for any loss occasioned by failure to put up a standard product.

Members can, on election, sell their honey direct, but it cannot then bear the Lone Star label.

Finding Purchasers

Mr. LeStourgeon outlines the method of selling as follows: "The members of the Association receive on the first of each month a blank form which they are required to fill out. The information which this blank contains gives the manager an idea of the condition of the honey plants, the amount of honey actually on hand, the locations where honey will be available for the market and on what dates; also, kind and how packed. With this information the manager approaches the wholesaler, who can then instruct his traveling salesmen of the price of honey for future delivery, taking orders from consuming points for direct shipment. These orders are mailed back directly to the manager, who in turn directs the honey producers where to send their honey. The honey is shipped direct to the consuming point in the amount desired. Attached to bills of lading is a statement giving the grade, the amount, the manner of packing, and the guarantee. A certain claim period is allowed the purchasing merchant. If the honey is not up to standard. the Association protects the buyer.

"Under this method the manager receives and solicits orders, both great and small, for honey, bees, wax, etc., from all parts of the country, together with the price the prospective customer will pay.

"The jobbers and wholesalers are much pleased with this manner of handling the Texas honey crop. They are relieved entirely of advancing any money on shipments. They are relieved of storing it and of a great deal of bookkeeping. All they do is to take the order for the honey and remit to the Association office upon receipt of bills of lading. Many jobbers are so interested in this plan of marketing that they have offered assistance to the Association, some offering to take stock in the Association in order to guarantee the enterprise."

The ingenuity of the plan is at once apparent. The wholesaler's order-taking machinery is used to get the retailer's orders, but the wholesaler never handles the honey. It is shipped direct to the retailer. This eliminates much breakage, leakage, rehandling charges, etc. Again, having one man in charge of the entire distributing enables him to avoid allowing any market to become glutted.

Brand used by the Texas Honey Producers' Association in marketing honey

Prices are established in April and full publicity on them sent out to the trade.

Advertising of a general nature has not yet been done, but in addition to using a standard label, each case contains a display card for the retailer to use to call attention to the honey.

Influences Legislation

This closer association of the honey interests of the State has also improved their ability to favorably influence legislation affecting their industry. This fact was notably proved when the Texas Senate proposed to lop $2,000 from the foulbrood appropriation. Within 48 hours the Association had engineered indignant protests from the "folks back home" and preven ed the cut.

Again, when the Washington authorities were considering the tin can shortage, and the committee had failed to list honey as a perishable, the Association was able to claim attention for honey and assurance of a supply of honey cans. Here the Association performed a national service for its industry.

A third interesting instance of influence with Government authorities occurred during the mobilization of troops on the Mexican border. It was impossible to sell honey for army use, because honey was not on the regular army ration nor on the conversion tables of the War Department. The Association took the matter up, and in less than six weeks permission had been granted to add honey to the troops' bill of fare. This opened a market for thousands of pounds at Camp Wilson alone.

A Financial Success

In July the Association will be two years old. That they have been highly successful years is evidenced by the actual figures on higher prices secured for honey and savings on purchases of supplies, given in the first installment of this article. In both its selling and purchasing departments the Association has been financially successful in a very marked degree.

But the mere fact that it has organized the industry has had far-reaching effects. It has earned the respect of the trade, the state and national authorities, and the consuming public, with the result that the Texas honey industry has been resurrected. Producers are no longer cutting each other's prices and undermining each other's security; the trade can get a standard product, uniformly packed, and with satisfaction guaranteed, and the consumer can feel he is buying a product of merit when he asks for Lone Star brand.

In conclusion, a word about the membership rules may be of interest. There are no annual dues. Shares are $10 each, and ownership of one share entitles the holder to all privileges. One hundred shares is the limit for individual ownership. Profits of the Association are rebated to members in proportion to business done.

Centralizing Bee-Yard Control

By J. J. Wilder

WHILE we are learning more and more every season to control our bees, holding them under check and managing more of them with the same help, we must learn to control the group of yards as well as the bees in them.

In the South many outapiaries are now being established making this a timely subject which it pays to look into.

I have looked over our country, picked out locations and established nearly 100 yards and I know what it means to make a mistake in this work; and, on the other hand, what it means to get the proper location.

I once placed a yard on a creek just one mile from the highway, with a rough, crooked road leading to it, and the only way out was to back out to the highway.

While the location on the creek was ideal in surrounding and in distance from other yards, yet the difficulty in reaching it made it a failure. We finally moved this yard near a good road, where we had to pass on our way to other bee-yards.

Another time I located a yard at the end of a settlement road, a mile and a half from a good public road. The settlement road was never kept up, and it was almost impassable at times. This meant a loss of time, and we moved this apiary where it is more easily reached.

Another yard, which was our first outyard established, was placed in an ideal location, and we always obtained a good crop, but there was no available territory beyond, where other yards could be established, and to reach it we had to make a special trip. In consequence it was sometimes badly neglected.

For success we must have yards conveniently located, so we may reach them with the least possible delay. We must centralize as much as possible in order to cut down mileage and allow more time for general apiary work. Of course, good roads have much to do with this subject, whether the distance be covered with teams or with trucks.

It is best to have for the central point of your apiaries, your home yard, or a specially good location for bees. Here you should have a large honey-house and workshop. The bees, at this center point, will be needed to take care of extra combs from outyards, clean up all freshly extracted combs, finish unfinished combs, use up any small amount of honey broken up or rendered unfit for packing, clean out cappings and do many other things that are a great help to the business.

The best stock can be kept here and the yard run as a queen-rearing yard, or much of the increase can be made here, because it is the most convenient yard and can receive daily attention. In consequence, this is a very important yard.

For other locations two and one-half or three miles should be your standard distance between yards.

In the southland we are blessed with abundant water courses. Large branches, creeks and rivers are almost our only salvation in beekeeping. Along these are swamps or low lands which bring about a complete change in the sources of honey, and as a rule bees will not do half so well out of reach of them. So we follow these as closely as the good roads will permit.

The first yard should be located not less than a half mile from a stream and more than 300 feet from a road, so you can drive into the apiary with a wagon or truck.

To establish your other yards, watch your nearby streams closely, at the same time keeping in mind the good roads. Perhaps it will be best to establish all your yards in a direct line, or it will suit better to have them placed in a large circle. All this depends upon the streams and the roads. If in a direct line 25 or 30 miles is as far as your last yard should be from your center point.

Other Central Apiaries

Rather than extend too far from one central point, it is better to establish other centers, placing the groups at least 100 miles away in an entirely different section, if possible, where the climate has changed somewhat and the honey plants will be of different variety.

The advantage of this is that, should you have a failure or a partial one in one section, such would not be likely to occur in the other apiaries. The main honey flow may come in the spring at one branch and in the summer at another. Then, too, you can shift your packers from one branch to the other, as well as your apiarist, for, as a general rule, the work slacks up in one place when it is just coming on at another. You also have a variety of honeys to offer for sale.

Numerous branches can be established in this manner, always leaving a distance of 100 miles from other branches. These can be established at the same time providing that labor and capital is at hand. It also is very important to have the center point as near as possible to some good shipping point.

The question has been asked, would it be advisable to erect a honey-house and install a packing plant for one yard, which is at considerable distance from the central apiary? We have tried this and found it a failure, for the pasture or range is never strong enough to support a large apiary and it would be too expensive to have a complete outfit for 75 or 100 colonies. The average production of honey in the Southern States is less than 50 pounds surplus per colony and this small amount can easily be carried to a central point for extracting. The supers can be returned as trips are made to and from the yards for general apiary work.

Establishing apiaries and centralizing them as outlined will make work easier, lessen expense and bring success.

Bradentown, Fla.

Santo Domingo Conditions

By H. Brenner

THE pioneer beekeeper in the Republic and old reader of the American Bee Journal is Dr. Maldonado, whose natural leaning is towards entomology. The doctor, a Spanish gentleman, is about 42 years old and a physician of unusual ability. He graduated at the University of Spain and speaks perfectly English, French, Spanish and Esperanto. In my researches about the flora and fauna of the island and in apiculture he is of great help to me through the encyclopedical condition of his knowledge. When I am back from my trips to rest in Sanchez, the evenings, on his verandah, sometimes till 1 and 2 o'clock in the morning, I consider as my best spent time. All his apiaries except in Arenoso are on his own land, and he has picked out over a dozen more sites which will be stocked in fall and next year. Herds of blooded Holstein cattle from imported bulls are grazing in his fenced (barbed wire) pastures. He also is a merchant of great ability, and a graduated pharmacist, owning a drug store in Sanchez, another in Matanzas, and interest in others in different towns. His agents are all over the Republic. I am glad to say that he will free himself gradually from some of his present enterprises to spend more of his time in apiculture. Another gentleman for whom I predict a future in beekeeping is Captain Dr. Dreyfus, our immigration officer and military physician. The doctor has in his residence an observation hive with a double colony, and intends to buy land on the north coast and go in extensively for beekeeping. The real beekeepers in the Republic are mostly wealthy land owners who are able to buy the materials. The poorer classes and very large majority, have colonies in logs, from which they get honey in place of sugar, and wax to make candles for light. I would like to send some pictures, but I lost my camera in crossing a flooded river in a log canoe; it fell through the negligence of a native boatman, and of course disappeared. I have not yet been able to get another.

A lover of bees in Santo Domingo, Dr. B. Maldonado, Sanchez, R. D.

About a month ago Dr. Maldonado bought a run-down apiary 5 miles from San Francisco de Macoris. We concluded to move the bees and material in the night to the station, load a car and use both in our apiary in Arenoso. The doctor made all the arrangements, etc. We had about 18 mules and horses and only four men. The first trip before midnight went off all right and we reached the station, bees and all, in good condition. After midnight it turned cold and the hands lighted a fire and refused to work, and we had to wait with the remaining colonies till the sun came out, as the doctor and myself could not load the mules ourselves. We tried it, but had to give it up. We had a time when we started, as the mules objected to the bee stings, jumped, kicked, ran against trees and against each other with the colonies tied with ropes on their backs. I

never had such a time before, and never want to see it again. We continually stopped the cracks which opened in the old, rotten hives, with clay, but it did not help much. The richest joke came when we reached town, at about 9 o'clock. We had the streets for ourselves and the bees. We lost ten colonies scattered along the trail. Of course we went back, nailed the boxes together and stopped the cracks with clay and brought them all safe to town and depot.

I am thinking of giving up my actual apiary work here to have more time to follow my real inclinations of researches and investigations, especially in apiculture. There is a large field open here in this respect and hardly a week passes that I do not find something new and unexpected among the bees. Since I am known here, I can well afford it, as every beekeeper will gladly extend his hospitality to me for the little help and advice I can give in return. I also will have more time to inform the readers of the American Bee Journal of my doings, and to put down for our station in Texas my observations in tropical beekeeping.

Questions Answered

With the two last mail steamers I received a number of inquiries from readers of the American Bee Journal which it is impossible to answer separately.

W. Va.—I have not met any bee diseases.

Market for the honey is now New York.

I do not know what honey is worth at present.

No winter in the tropics.

Property is safe here, but they certainly steal honey out of the apiaries if no one lives there.

Nectar is coming in the whole year, more or less. A real flow I have seen at the end of December, January and February. They told me that the main flow is in June, July and part of August.

Ulster, Pa.—I cannot use any U. S. stamps for letters here.

Thank you for your compliments about my articles.

Your other questions do not belong in the American Bee Journal, but if the editor does not mind, I can inform the readers also about quality, price of land, population, etc., as I am going to buy myself. (Will be glad of a short article on this subject.—Editor.)

There are no poisonous snakes here, as far as I know.

There is lots of room for people like you without killing the natives. There is some reason for their laziness; nature produces everything they need. So why should they work?

Dallas, Tex.—I do not know if you can stand the climate here. I never have been sick and my health is improving.

Lots of mosquitoes in some parts, and in some less. I cannot sleep without a mosquito bar.

S. Carolina.—Not advisable for strangers to buy land here. I know several cases where buyers had to pay twice. If you have a friend to advise you it is better.

The bulk of the honey is produced in hollow logs. The natives press it out, brood and all, put it in gasoline cans, stop the opening with a green corncob and sell it in the little country villages to the buyers, who sift it through coarse wire netting into 50-gallon barrels. This is the stuff that is ruining the honey market for the tropics. For about two or three weeks it tastes all right, but after that time it gets a nasty taste and is hardly fit for table use. I send samples of extracted honey to dealers and also to the American Bee Journal

Sanchez, R. D.

Beekeeping in Jerusalem

By Ph. J. Baldensperger

JUST seventy years ago my father arrived in Jerusalem bent on missionary work among the natives. He had a greater belief in acts than in words. He founded an apiary on old principles on Mt. Zion. After a long and active life he laid down his weary head and now rests, since 1896, not more than a hundred yards from his first apiary, in the cemetery near by. His first apiary resembled all apiaries which have existed in the country for the last three thousand years, without a single change. The pear-shaped hives, manufactured in a pottery inside the city walls, had been copied for generations without number, and faithfully reproduced the patterns no doubt imported from Egypt and Assyria by Jews returning from captivity.

Beekeeping was unknown to the Hebrews before their contact with the ancient civilization on the Nile and Euphrates, as is evident by a passage in Isaiah vii, 17-18: "The Lord shall hiss for the fly that is in the uttermost part of the rivers of Egypt, and for the bee that is in the land of Assyria. And they shall come and shall rest, all of them, in desolate valleys, and in the holes of the rocks, and upon all thorns and upon all bushes." Hebrew scriptures talk of the "Land flowing with milk and honey," but the error is only from the translation. Milk, or rather sour milk, the Arabic "Labban," is still a dainty among the natives. As for the Dabsch, translated "honey," the article is more widely known yet, and called Dibs. This syrup is prepared from the boiled juice of grapes. Dibbs is now made, as in the older days, in great abundance in the magnificent vineyards all around Hebron.

Nothing has changed in the Land of Promise since the day of Joshua and Caleb, excepting some religious rites. But we meet everywhere the same people, the same names, the same manners, the same way of living, and, to a great extent, the same language.

Joshua and Caleb, it is stated, came to the brook Esheol and carried away big clusters of grapes to their astonished tribesmen in the wilderness. The Moslem Hebronites of our day raise the luscious fruit in big clusters and offer them for sale in the neighboring villages and as far as Jerusalem. They also boil the grapes into Dibs, on the same spot at Ain-Askala, in the same way as it was done before the Hebrews, in rock-cut presses. "He made him to suck Dabsch (translated honey) out of the rock." Deut. xxxii, 13.

There is no doubt for me, who was born and grew up amongst the natives, that they are the closest and most authentic descendants of Canaanites and Hebrews. My plea for them is that when this great war is over they should receive the land promised to them ages ago, a promise now renewed by President Wilson, to dispose of themselves. Faithfully they have clung to the native soil, faithfully they have continued the traditions and to them alone it ought to be reserved.

When I was born, in 1856, near the walls of El-Kuds-esh-Sharif, the ma-

Fig. 1.—Jerusalem. 1, city walls; 2, Zion's school; 3 David's grave; 4, Apiary; 5, cemetery; 6, Miss Baldensperger; 7, Mrs. Baldensperger; 8, H. Baldensperger, Sr., (lived in Jerusalem 1848 to 1896); 9, Henry Baldensperger.

jestic sanctuary, as Jerusalem is called by the natives, the apiary, according to the archaic system, was all tucked up before the solid arch in masonry, with a dark passage behind to work the bees.

Messrs. D. A. Jones and Frank Benton came over from America in search of new races of bees, and under their instructions the dark passages and archways were discarded and the bar-frame hive and American modern methods introduced by their disciples, Baldensperger brothers. (This was in 1880.—Editor.)

And the light was so clear that Ehmad-en-Nahale, our indigenous beemaster, was never heard of again. He continued to knock the coffee in a dark street in Jerusalem, as he and his forefathers had done for generations. Moslems hold fast to their methods. It is profanation to grind the coffee, just as it is profanation to walk into sanctuaries with shoes on. "Take off thy shoes from thy feet, for the ground where thou standest is holy." The good Nahale used to come occasionally in two seasons, swarming and gathering the honey. In April he would gather the swarms, gently showing us the Emire or Duchess, as he called the mother-bee, and in August he took out heavy combs of honey, which he laid on plates with great satisfaction, and a sweet smile. He was very sober in words. 1. "The bees did not like harsh persons." 2. Perhaps he preferred to keep the "secret success" for himself. Quietly he gathered cow's dung, filled with it a small pitcher, put a burning coal to the fuel and patiently blew till a tolerable quantity of smoke gave him security against the bees. He did not live to see our modern inventions, smokers, extractors, comb foundation and the like, and I am afraid he could not have tolerated having his pets taken out of jar hives and introduced into wooden boxes, and in the open air.

Poor Nahale! Dear tradition! Though established on a high and dry plateau, almost in the center of Judea, Jebus, the dry, as the name indicates, was a comparatively good honey region. Big apiaries set up in the old fashion by the Greek monks, in the environs of Jerusalem, gave good crops to the convents. Honey was kept for church grandees there, as it was only known by the better classes in town. There was a time when honey was more abundant in Jerusalem, since there existed still the "Honey-man's street," Haret-el-Assali.

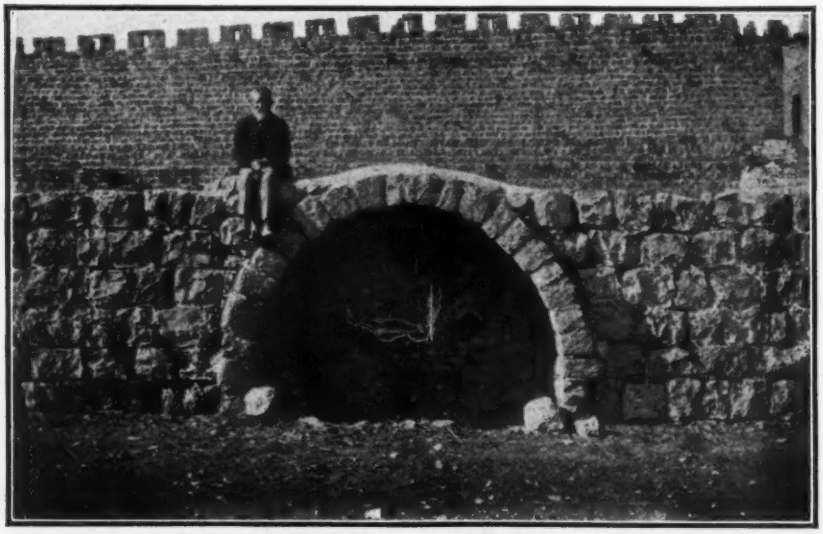
Henri Baldensperger (Philip's brother) near the old pear-shaped hives piled up under a double rank of arches in the Holy Land

In the American Bee Journal for December, 1917, a list of bee places is given in the United States. Palestine, though very small, has 6 or 7 names reminding one of bees and beekeeping. It measures hardly 25,000 square kilometres and has a population of one million, or thereabouts, whereas the United States, spreading over 9,383,000 square kilometres, with a population of over 100,000,000, has 73 bee places named. The names are spread from Baalbek in the north to the environs of Hebron in the south. 1. Nahleh (the bee), near Baalbek; 2. Daburiah (the hornet retreat), near Nazareth; 3. El Asaliyeh (the honeyed, in the Hauran, beyond Jordan; 4. Deir-en-Nahel (the convent of the bees), near Jaffa Latrone; 5 Asalin (the honey men), near Gath, Deir Imheisom, in Philistia; 6, Nahalin (the beekeepers), southwest of Bethlehem; 7. Deir-el-Asal (the convent of the honey), between Gaza and Hebron.

The town of Jerusalem was somewhat protected against the warm east winds, by the Mount of Olives, which winds have the faculty or drying up the nectar. The wind known as Sirocco, is more properly called Sharkie by natives. West winds blowing across the Mediterranean bring moisture and clouds which spread Nada, or dew, over the hills and greatly help the honey plants. On rare occasions the hot Sinum (poisoned south wind) blowing from the Sinaitic peninsula, dries up flowers and plants, and the honey season is usually a failure in consequence.

On warm days when the weather is calm, the bees find their way over the valleys of Jehoshaphat, Cedron and Hinnom and forage on all kinds of honey plants on the environing hills of Olivet, Siloam, etc. Olive trees and fig trees, which grow usually all around, have but very little honey, while almond trees around the Mount of Olives and Bethany, as well as down the Cedron, give an early lick in February and March. Hawthorn flowers, a little later, help the bees in their swarming propensities. As the town is built almost on the watershed between the Mediterranean and Dead seas, there are but few springs in the vicinity and they are several miles from the walled enclosure. Bees must look for the necessary water to raise brood in the pools of Hezekiah, Bethesda and Mamillah, as well as in private gardens. The disease-carrying mosquito (Anopheles) lives and thrives about the stagnant waters.

Beekeeping was mostly confined to open spaces against the interior of the walls, either toward the north, or the large gardens on Zion. The



Henri Baldensperger (Philip's father), on his old native apiary in the Holy Land, behind the walls of the fortress

pine trees, as well as a few olive trees in the Armenian gardens, afford them propolis and a kind of droppings known as miellat (honeydew), from the pines. Long before this trench-building war, bees knew how to build trenches made of the resin found on leaves and branches, to shelter themselves against hornets or other enemies who tried to enter the hives. Small lizards and sometimes serpents, mice, snails, enter the hives, or would enter but for the propolis with which the bees entrench themselves against their enemies. The death-head moth (Sphinx atropos) swarms about the hives in autumn. If it gets into the hive easily it is often too greedy, and too swollen with the honey pilfered inside, and is killed by the furious bees. The skeletons are sometimes found by dozens at the bottom of the hives, embalmed in the resinous matter. Every portable fragment has already been carried out before propolizing.

(To be Continued.)

Packages for Extracted Honey

By Morley Pettit

TYPES of packages used for extracted honey will depend on the form in which the ultimate consumer wishes to receive it. While capable of some education, that individual is something like a bee in that she (gender used advisedly), is the final judge as to whether the behavior of the beekeeper is acceptable or not. He who would sell honey must study the consumer, and as success in beekeeping depends on a knowledge of bee-behavior, so the successful disposal of the crop depends on a knowledge of the preferences of those to whom the sale is to be made.

Consumers may be classified as fastidious small buyers, and careful buyers of quantities. The former are mostly city dwellers, where similar foods in glass containers compete; they want liquid honey in glass. The quantity buyers in cities also want honey in liquid; but will buy in larger packages of tin. In cities where the sale of well liquefied honey has not been pushed, granulated honey will retail in tin or paper, or even in glass to a limited extent; but the majority of people, when given a choice, will buy honey which has been well liquefied in preference to that which is in the granulated form. The latter finds its largest sale among farmers whose wives have ample kitchen facilities and can liquefy it when they choose without much trouble. This is a satisfactory arrangement while supply falls so far short of demand, and because granulated honey ships more safely. When the need arises I am sure that the careful liquefying of all honey just before it goes to the consumer will greatly increase the demand.

Storage Containers for Liquefying

The usual storage containers for liquefying or for sale to re-filling concerns is the 60-pound tin, because of the ease with which it is handled and heated. It can only be filled once with any degree of satisfaction, on account of leakage, rust and disease, and becomes a rather expensive package except for home use only. The alternative is a used wooden barrel. When emptied of glucose, alcohol, or some other materials, these can be steamed out, coopered, parafined inside and used for honey.

My personal experience with barrels has been confined to those which had previously been filled with glucose. They cost me one dollar each a couple of years ago, although I used to get them for half that price. They are made of white wood, iron-hooped, hold 650 pounds to 700 pounds when filled, and are not so hard to handle as one would think. There is a "knack" in handling them, and two men who have it will roll them almost anywhere with a rope and some planks.

The first lot of barrels I ever filled had not been coopered since they were emptied and must have been damp. The sun shone through the windows on them, and its heat, together with the drawing of the honey inside, dried out the staves and set them to leaking at every joint. When we came to team them to the station there they were. To make matters worse, the dripping honey smeared the hoops on the under side so they would not hold when driven.

I got through with that shipment with only a few dollars' loss from leakage; but it was a lesson to cooper carefully every barrel before filling. The hoops should be again driven just before shipping. Empties should be stored in a dry place several months, if possible, then coopered well and waxed. On no account should barrels intended for honey get wet. The ends of the staves swell, and because the hoops prevent expansion, their fibre is crushed so they gape open on drying in a manner which no hoop driving will close. They can be caulked with rushes and waxed so as to hold; but it is a lot of work and the result is not so satisfactory as though they had been kept under cover. Liquid honey can be shipped quite safely in barrels, although, of course, the risk of leakage is entirely removed by granulation.

To liquefy honey which has granulated in barrels, the hoops and staves may be knocked off and the honey cut up with a piece of steel wire having a handle on each end. Some remove only the head of the barrel, dig out the honey with a clean spade and return the head for future use. It is possible to reassemble the knocked-down barrel, if one has a cooper's skill and tools. One would need to compare methods here in view of labor, cost of barrels, and the fuel value of the staves and head.

Honey in barrels can be sold only to such manufacturing and re-filling concerns as have facilities for handling them. Necessary changes in equipment used for handling 60-pound tins can easily be made, and a patriotic service would be rendered by such firms using barreled honey instead of tinned.

Tin Packages for Selling

The standard tin packages for honey are: 60-lb., 30-lb., 10-lb., 5-lb. and 2½-lb.

Sixty-pound tins may be square and crated singly, or boxed singly or doubly, or they may be round and jacketed. Crates or boxes for square tins can be made or repaired at home, and square packages pack more closely for shipping. On the other hand, they jam more readily and leak in transit, and the first cost is slightly higher. They are seldom retailed and the Ontario experience is that in years of large production they are the hardest package to sell, probably because Ontario beekeepers use them too freely.

Thirty-pound lard pails, bucket-shaped, with a slip cover, japanned with a stencilled honey label, are sold to a limited extent. They are a good family size, and make useful pails when empty; but they can be shipped only granulated and are awkward to crate or box. I have seen small grocers in Montreal dig granulated buckwheat honey from them for retail in wrapping paper.

Ten-pound, five-pound and two and a half pound pails are made both slip cover and lever cover, both plain and lithographed. For retailing at home the slip cover is a little more convenient; but it is not so satisfactory for shipping. So long as demand exceeds supply, plain tin lever cover pails may be sent direct to the consumer for use at an early date. Pails lithographed with the beekeeper's brand, name and address, sell better, keep free from rust indefinitely, and continue to advertise his honey so long as the pail continues in use, wherever it goes. Plain tin pails of honey stored in unheated rooms in changeable weather fail to warm up quickly with a rising temperature, and their cool surfaces condense moisture; frequent wetting and drying dull and soon rust the tin, and lower the selling value of honey which is otherwise first-class. Furthermore, custom requires that all tin containers of food for retail be covered with an attractive camouflage. In order to compete on the shelves of the high-class grocer with other package goods, honey must be made quite as attractive as they. Uniform crates of 60 pounds capacity for all the smaller sizes are standard for shipping.

By a ruling of the Ontario Beekeepers' Association, ten-pound pails and smaller sizes are filled gross weight, and their size, as manufactured in the Province, corresponds. Previous to the adoption of this ruling much confusion prevailed. Some sold gross weight, using pails of the right size; others sold net weight and required larger pails. The manufacturers had to make two sizes of pails so nearly alike that mistakes in ordering and in filling orders were frequent. Beekeepers selling net weight lost the price of the pail, or asked for its return, with indifferent results, or charged extra for it and

made the consumer dissatisfied, or brought it back a second-hand pail later, or lost custom through charging a higher price for their honey than those who sold gross weight.

All this confusion of selling practice resulted in heart-burning and incrimination, until the decision of the association established a standard which most beekeepers now observe. In selling gross weight the beekeeper does not conceal from the buyer the fact that he is sharing with him the cost of the package, the custom is general and there is no objection. Where the net weight custom is enforced by law, as in the United States, prices become adjusted accordingly. Ultimately the consumer pays—he must if production is to be continued; and it amounts to about the same thing whether we sell net weight or gross weight, so long as all sell the same way.

Sixty-pound tins are always filled net weight. These are sometimes made too large and the novice puts in amounts varying from 62 pounds to 65 pounds, keeping account of them and itemizing the weights in his invoice when selling. He is unfortunately, though not unjustly, disappointed to find that the buyer will only pay for a standard amount in a standard package.

Glass Containers for Honey

Well liquefied honey is sold in a great variety of glass containers, from two-quart jars down to small bottles for individual service. First cost, breakage, boxing and increased freight rates make glass an expensive package; but it puts up an attractive appearance and pleases Madam Fastidious Buyer. The individual service bottle is absolutely necessary if patrons of public eating places are to have honey at all. Honey is too "sticky" to serve in public in the usual way.

Paper Containers for Honey

From time to time different forms of paper honey containers have been advocated. Parafined manilla paper bags, advocated by R. C. Aikin, of Colorado, were among the first. He filled them with alfalfa honey and let them stand open until it granulated, then folded the tops down and sealed them. They were nicely printed in colors with the beekeeper's name and brand, and made an attractive package. I filled all sizes of these from the 10-pound size down, with clover honey, which granulated hard and firm. Some high-class grocers tried them, but they did not sell well. Their customers preferred liquid honey when they could get it. Furthermore, the bags could not be kept long in a warm temperature without becoming soft and sticky. In other words, the honey, of whose keeping qualities beekeepers boast so much, became more perishable and more liable to be a loss to the dealer who did not happen to sell it promptly. Next came cone-shaped paper milk bottles, recommended by W. A. Pouder, of Indianapolis. Their fate was the same as that of the bags.

About that time opening large tins or barrels of granulated honey in the grocery store and retailing the honey wrapped in paper like bulk butter was tested extensively. In one case a barrel of clover honey, without the barrel, was made the center-piece of a grocer's Christmas window, and created quite a sensation. In another case the manager of a chain of provision stores in Ontario arranged with a beekeeper to purchase clover honey in 60-pound blocks in tin or wood, intending to strip and use them for window displays before cutting them up to retail by the pound.

These practices were soon discontinued; but we thought the failure was due to prejudice in favor of package goods for retail and cast about for a convenient and inexpensive package for granulated honey. We still believed that Mrs. Fastidious Buyer would like granulated honey if we got it to her in the right way. So "honey bricks" were introduced. That is, the block of honey was cut up with wires into bricks of uniform size, a butter-cutter being used for the purpose. Each brick was wrapped in thin waxed paper and placed in a carton, which was then covered with a lithographed label, fastened at both ends with tasty seals.

In the Pettit apiaries honey bricks were tested most thoroughly. They sold well at first, but repeat orders came slowly, the preparation of them was slow, disagreeable and expensive, and the second season we did not think the matter worth following up. Even the firm who advertised them most widely does not seem to have any more to say about them, and I do not know of any style of paper package being marketed extensively at the present time.

So the pendulum of the paper package has swung with the years and the reasons for its failure to stay may be summed up as follows:

When the two are marketed side by side, honey which has been carefully liquefied sells more freely than granulated honey. Even the best honey we are able to secure does not always granulate with a smooth, dry grain, suitable for a paper package. If left exposed to the air honey generally loses aroma, flavor and specific gravity, yet such exposure is practically necessary when paper bags are filled for granulation. All granulated honey becomes soft in time, so that the paper package would not be safe for honey stored beyond the winter months. Yet this is likely to occur at any time, and thus one of the chief arguments for honey is lost.

The chief arguments in favor of the paper package are its cheapness and lightness; but for shipping, it would require stronger and more expensive crates. For those who like granulated honey they open up very nicely for serving, provided the honey has granulated well and has not gone soft. If the time should come that we cannot get tin at any reasonable price, paper seems the best substitute in sight. Until then I cannot see that tin is any more expensive in proportion to the price of honey, or of paper than it has ever been. Prices of all three have advanced. Dollars are cheaper than they were. It takes more of them to buy the necessaries of business and of life, so we stand about where we did in that respect.

Georgetown, Ont.

Being Sweet Without Sugar

By Mary G. Phillips

NOW that the canning season is upon us, every woman's thoughts turn toward sugar. Will there be enough for all of us to do the canning and preserving that is necessary in order to save the fruit in our gardens? We are assured by the Food Administration that what sugar there is will be fairly and equally distributed, but of course that means with the co-operation of every housewife. In a democracy like ours, the success of any plan of dividing food stores depends upon the willingness, sincerity, earnestness and common sense of the consumers, and that is what Mr. Hoover is banking on in his plan for the fair division of sugar.

We all know that there is not enough sugar now in the world to allow us the annual 81.6 pounds per person that we are accustomed to. But we also know that that is too much sugar for our own good. England is the only other nation to use such large quantities of sweetening, for her usual sugar ration used to be even larger than ours—86.3 pounds. People who live very active lives where muscular exertion is constantly necessary, need a great amount of sugar, because it is rapidly assimilated and its energy becomes immediately available to the body, but the ordinary person needs very little. The only defense that most us have for the amount of sweets that we eat is that sugar improves the taste of many foods, and we like it. Before the war, Germany and France were using just about half as much sugar per person as we were, and Greece and Italy were eating only about 7 pounds a year per person. Can you imagine the average American cutting down his ration to that? It would undoubtedly mean going without soda water and ice cream between meals, tabooing cake and candy, eating unsweetened cereal and all sorts of "sugar sacrifices," **but it can be done,** and if we can taste the sweet fruits of victory by now eating unsweetened foods, I move that we do it. It is carried unanimously, and so there will be larger quantities of sugar released for the preservation of this season's fruit crop. Dr. Alonzo Taylor says:

"Everything that we do, plan, eat, wear, must be analyzed and measured from one single point of view—will it contribute to the carrying on of the war, or will it contribute to its prolongation? There is no other thing in the world for us but to de-

fine everything in our lives as acts of military necessity or policy."

Although women are eager to conserve sugar, they are asking somewhat impatiently, "Why is there a sugar shortage?" and "Where is the sugar?' 'and the reply is the usual one, "C'est la guerre!" If you will look at a map of the world showing the regions where sugar cane and sugar beet (our only two sources of granulated sugar) are grown, you will see immediately why there is less sugar for us today. The largest producer of sugar cane is India, but with her enormous population she has no sugar for export. Second in production is Cuba, and most of the sugar for us and for Europe comes from that island and the other West Indies. The Barbadoes have had over sixty per cent of the surface cultivated for cane for two hundred years. But sometimes the crop fails in Cuba, and nowadays the ships to carry a crop are few and far between. It also happens occasionally that a submarine interferes with our obtaining the sugar we expect. Here at home we find cane growing only in Louisiana along the lower delta of the Mississippi.

However, within the last half century we have had a new industry arise—the manufacture of granulated sugar from the sugar beet, so that we no longer depend wholly upon sugar cane. The sugar beet grows in the north in regions where the summer temperature is around 73 degrees, and where there is considerable summer rainfall. In America it is produced principally in Michigan, Wisconsin, Minnesota, Colorado, Utah, Idaho and California. In Europe, unfortunately for the world, the areas devoted to sugar beet cultivation are the parts of northern France and Belgium now occupied by Germans, so that any sugar produced there goes for German consumption. Germany is the only other European country to raise sugar beets to any great extent, with the exception of a small area in southern Russia, also of no use to us. So it is that our allies must depend upon us for sugar. When we remember, too, that soldiers need more sugar to provide fuel for their bodies than when they were leading civilian lives, we will see how necessary it is for us to use as little as possible. Have you not heard stories of soldiers so starved for sugar that they would trade almost anything they owned or undergo any hardship for the sake of getting a tiny piece of chocolate?

I find that the easiest way to conserve sugar is to ration the family. I buy only so much each week, and if it does not stretch to the end of the week, we do without and eat honey. We generally find that it does stretch to the week following. Our great grandmothers had no granulated sugar, nor did the old Greeks and Romans, who were famous for their sweets, and indeed until a little over a century ago, everyone was dependent upon honey, maple syrup, sorghum or corn syrup. Honey is the most concentrated as well as the most ancient of these natural sweets. Beekeepers' wives are particularly fortunate in knowing this good food, and in having the opportunity of feeding it to their growing children. There are so many who do not use it at all, that beekeepers' wives might do missionary work in teaching its value, as well as in advertising their husbands' business, by talking for honey as a food. Granulated sugar is so refined in its manufacture that there is nothing in it but pure sucrose, while honey, manufactured only by the bees, contains not only predigested sugar, but also small quantities of valuable mineral salts, gums, and one of the two recently discovered mysterious chemical substances which are necessary to growth, called "water-soluble-B." There is an added value in honey to me, and that is its romantic quality. In its limpid beauty I see the myriads of flashing wings carrying into the dark hive the watery nectar, which by some strange alchemy known only to the bees, is transformed into this wonderful aromatic sweet. I think of the millions of generations of workers who have faithfully carried out the life of the hive as it was thousands of years ago. Probably back as far as the Stone Age, our forefathers searched the woods for bee-trees, in order to carry home to their caves the precious stores of honey. Can't you see the naked brown babies standing at the mouth of the cave, brushing their hair from their eyes in order to see better when father might appear down the leafy vista? Can't you imagine their joy when he comes bearing a sticky, dripping mass of broken comb on a grape leaf, and hear them murmur "Ugh! Ugh!" as they cram honey, pollen and brood into their mouths, all at once? That is Stone Age talk which means "Thank you, kind father, for this fine honey. It is too bad you cannot find bee-trees oftener."

It is for us who know honey not only to spread the knowledge of its value as a food, but now, we may well give up the use of sugar almost entirely, using honey instead.

Children are especially fond of honey, and there are many ways in which it may be used for them. Try making cocoa with honey and you will find there is a smoothness of texture and delicate flavor that is delicious. A pinch of cinnamon makes a pleasing variation. Then very often for school sandwiches, I mix honey and peanut butter, a combination much enjoyed. If you do not already own the Bulletin on "Honey and Its Uses in the Home," (Farmers' Bulletin 653), send to the U. S. Department of Agriculture, Washington, D. C., for it, for it contains many good recipes and suggestions.

I suppose that every beekeeper's wife has experimented with honey in canning. It gives satisfactory results, although the flavor of the fruit is generally a little changed, particularly if a strong honey is used. Apples canned in honey taste almost like quince, and they make a specially good pie. This year I shall preserve my currants in honey, making the famous Bar-le-Duc preserve, but I do not believe I shall pick out the currant seeds one by one with a needle.

Currants in Honey. (Bar-le-Duc.)

Take equal weights of honey and currants. Bring the honey to boiling point, add the currants and boil gently until the fruit is tender. If the currants are so juicy that they make the honey watery, remove the fruit and boil the liquid down until a rather thick syrup is obtained.

I believe that the patriotic thing to do this year with regard to fruit is not to make jelly if the fruit can be used in any other way. Canning requires least sugar, but if you have fruit which you wish to preserve, by all means make jam. Any housekeeper who has rows of shining glasses of clear jelly, cannot show them with pride to her friends this year. Instead, she would need to hide them with shame—but surely no American woman will let it be said of her that she is not strong enough to forego the pleasure of making and eating jelly when she has the strength to send her men to the battlefield with a smile. The brave women of England who have been getting along on the meagre ration of 8 ounces a week per person for many months, have succeeded in saving from that little bit enough to help preserve the large fruit crop. Now they are to be allowed an extra supply of as much as ten pounds for each member of the family. Any sugar over that amount necessary to save the fruit of their own gardens will be granted, provided that the jam made be sold to the government for the use of gardenless folk.

Many fruits may be dried for winter use, particularly apples, cherries and peaches. Others may be canned with no sugar or honey, as green gooseberries, or with thin syrup. Then, when they are to be used, more sweetening may be added if desired. In all my canning and preserving, I keep at my elbow all the government bulletins I can get on the subject. Those that were almost worn threadbare last season, and which I shall follow closely again this year, are Farmers' Bulletin 841, Drying Fruits and Vegetables in the Home; Farmers' Bulletin 853, Home Canning of Fruits and Vegetables (especially recommended for housewives in the south), and Farmers' Bulletin 839, Home Canning by the One-Period Cold-Pack Method (recommended for housekeepers living in the northern and western States). All of these may be obtained by writing to the U. S. Department of Agriculture, Washington, D. C. We cannot afford to have fruit spoil before or after canning this year, and so we must make ourselves as efficient as possible when it comes to preserving the fruit. We hear so much of German efficiency that I scarcely like to use the term, but if we can beat the German at his own game, we will surely win the war!

Changing from Comb to Extracted Honey

By C. P. Dadant

MR. EDITOR: I am contemplating changing from comb honey to extracted. My frames are all alike for brood-nests. They are the standard Langstroth and the hives are 8-frame size. My comb-honey supers are half depth and, if fastened two together, would make one full depth extracting super, which would enable me to change very easily from one to the other. What I wish to know is whether you would advise to use half depth frames in those comb-honey supers and extract from them. I know that you have had much experience right along this line. I had thought that the shallow frames might be preferable, as one stroke of the honey knife would clean one side, in uncapping. I would appreciate any suggestions that you may offer

Very truly,

Delmar, Iowa.

In order to give my reasons for the ideas that I am about to develop, I have thought it best to relate my experience in comparative tests of both full stories and half stories.

We began successful beekeeping with the 8-frame Quinby hive, which may be properly compared to an 8-frame Jumbo hive. The Jumbo hive takes frames of Quinby depth and Langstroth length, and the Roots put them upon the market and gave them that name at the suggestion of A. N. Draper, who had seen our large hives in use and thought them just right. But our hives and the Jumbo hives are all made now of 10-frame size, because we noticed that the 10-frame colonies filled just as many supers as the 8-frame colonies, and they were 25 per cent larger, therefore yielding 25 per cent more honey on an average. That is to say, a colony in a 10-frame hive filled the 10-frame super as quickly as the colony in 8-frames filled its own narrower super.

For the information of those who may not know the difference between our Quinby frame and the Langstroth and Jumbo, we will say that the Dadant-Quinby frame is 2⅛ inches deeper and 1⅛ inches longer than the Langstroth or Hoffman frame. The Jumbo is of Langstroth length and Quinby depth. If we were beginning over, we would probably adopt that frame.

That the greater result with the larger hives is due to a greater breeding room for the queens was proven to us in the following manner:

About 1876, we took over 105 10-frame Langstroth hives of bees to manage for an old beekeeper who could no longer take care of them. He had worked for comb honey, but we preferred the production of extracted honey, so we prepared to run this apiary by our methods. We tried both full stories and half stories. The half stories (so-called) that we used on these 10-frame Langstroth hives just filled the requirements of the prolific queens. In many cases, supers put on the hive early were filled with brood, which gave us an increased amount of field workers when the heavy crop came.

Our own hives of 10-frame capacity usually had sufficient room below for the most prolific queens. This convinced us that the 10-frame hives of Langstroth size are too small to accommodate prolific queens. A story and a half Langstroth proved just right for handling. Of course, when we placed a second half story over the first, we secured honey in it.

At the same time we tried full-sized upper stories. We did not like them because the bees bred in the center of the upper stories or in the lower edge of their combs. So we often had both honey and brood in the supers. Someone will, perhaps, say: "Why did you not use a queen excluder?" Someone in the December number asked how the Dadants kept the queens out of the upper story if they did not use queen excluders. The answer to both is that the Langstroth 10-frame hive is too small and that we want all the brood the queen can produce in the spring. So we could not keep the queen out of the upper story if we used a 10-frame Langstroth hive without excluder, and yet we want all the brood that may be produced. With the larger hives the queens usually have enough room below and rarely go in the supers.

We have never used the 8-frame Langstroth hives. But if we had them now, I believe we would consider it necessary to use two full stories for breeding and more full stories when the crop came. A shallow half story of just the depth of the pound sections is too small for prompt extracting. Our own so-called half stories are deeper than half a story of Langstroth size. The side bar of their frames is 6 inches and the case itself is 6⅝ inches deep. This makes the combs of the right width for the use of the uncapping knife and an expert uncapper gives just two strokes of the knife, one downward on one side of the comb, the other upwards on the other side. So there is no motion lost, and that is how my son-in-law, Leon Saugier, in a red-letter day, uncapped 5,500 pounds of honey in 8 hours, in the bounteous season of 1916.

In our extracting supers we use one comb less than in the lower story. In an 8-frame hive we would use only 7 frames in the extracting super. If you use 8 frames in the upper story of the standard size hive, the combs will be too thin for profitable work. With 7 frames the combs will be thicker and the result will be less labor and less expense, with the same yield. In a 10-frame hive we use 9 frames in the super.

An advantage of the half-story super is in giving accommodation to an undersized colony. A colony may do fairly well and yet not be powerful enough to occupy a full additional story all at once. This is most in evidence with large hives. As the 8-frame hive is practically an undersize, the additional space provided by another full story would not look so vast as with our large hives. But in any case when you add another full story you positively double the size of your hive at one operation. This is a good move sometimes, but it often proves unsatisfactory. We prefer to do it more slowly.

The advantage of the full upper story system lies in having but one size of frames. This looms up big to many people, but it does not tempt us.

From the above experiences, you will probably conclude that, with the 8-frame hive, it is best to follow your suggestion and double your comb-honey stories and use full size frames. Very likely, after weighing all the arguments, that will be the best course to pursue. At any rate, by all means avoid using half stories as shallow as the pound section comb-honey super. They are altogether too shallow for profitable work and there is too much handling.

Introducing Queens by Smearing With Honey

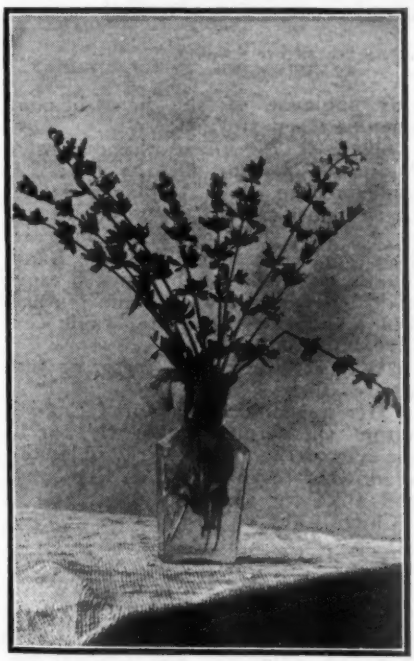
By F. M. Baldwin

WHEN the editor of the American Bee Journal offered a prize of $10 for a description of the best simple device in use in an apiary, I said "That's my money; I'll make my wife a present of it." Then at once I proceeded to write about it in my mind. But, alas! Like many other things I do, it was purely mental and never saw the light of day. The months have gone by; I have slept on my rights and have lost my day in court. The device is not costly. It calls for no extra investment; the article is already in use in every household. It is easily accessible, found in every kitchen. A coffee cup or a drinking glass is the thing in mind. If one of these is not convenient an old tin dipper or even an empty can will serve. So much for the simplicity of the device. Now, as to its usefulness.

While living in Florida I persuaded my friend, Rev. P. H. Hensley, Jr., of Brooksville, to go into the bee business, giving him such instructions as I could from time to time. He got a few black bees and I sent him Italian queens as frequently as he could use them. It was his first year with bees and he had never tried to introduce a queen by any method. I showed him how and he succeeded in getting all I sent him safely into the hives. Other novices have found the method a success. Prof. E. G. Baldwin, of DeLand, Fla., and Henry S. Bohon, of Roanoke, Va., are experts of many years' experience. They have found it safe, easy and time-saving. They are recommending it in their writings as well as using it among their bees. That it works with the novice and the expert unfailingly is enough to prove the practicability of the device and entitle it to consideration in

any contest for a prize, but having let the opportunity go by unimproved, I cannot now claim the reward. He who fails to enter can lay no claim to a crown in a race.

First, find and remove the old queen, then pour about three or four ounces of honey into the cup. Put the queen to be introduced into this honey and roll her around a number of times with your finger until she is thoroughly smeared. Don't be afraid of drowning her. Just immerse her again and again until it looks like she is dead. Then turn the honey and the queen over the tops of the frames and let the mess run down between the combs, carrying her with it. Shut up the hive, being careful to provide against robbing, and leave it alone for at least three days. Don't open the hive to see how your experiment is coming along. To do so might cause trouble. Be patient, and when you examine after several days you will find the lady perfectly at home, and she will have laid a fine lot of eggs if she is a good breeder.



Sage—An old-fashioned flower for an old-fashioned virtue
(Photograph by John R. Douglas)

I have found eggs in abundance and also hatching larvæ the fourth day after introducing by this method, showing that no time was lost after the hive was closed up. The bees at once licked the honey off the queen and she was as much at home as if she had always been a part of that colony. It is my practice to let the hive alone until the fourth day. But Mr. Bohon, being of a more inquiring turn of mind, reports that he has found the queen at work laying eggs an hour after he poured her down between the combs.

Confessedly it is more difficult to introduce a virgin that is several days old than any other queen. Last summer I visited at Roanoke, Va. In August I raised some Italian queens in the yard of Mr. P. B. Hartman about five miles southwest of that place. Desiring to mate them I carried four virgins when they were four days old to the yard of Mr. Henry S. Bohon, five miles north of Roanoke, and introduced them by the honey route into three-frame nuclei. The fourth day, wanting to know how well my attempt to get them fertilized had succeeded,I opened the nuclei. Three of them had mated and were at once caged, returned to the Hartman yard and re-introduced by the method under consideration.

The fourth virgin was missing. It is my belief that she was lost on her wedding flight. But of course there is a possibility that the bees balled her. If they did, it is the first and only case of the kind that I have known. In a published article over his own name, Mr. Bohon says that he believes this method will work in more than 95 per cent of the cases in which it is used. Hope you can get some of the experts to give it a full test and report. If it is as safe as some of us believe, it is time the fraternity were fully advised about it.

Mt. Vernon, Ga.

My Neighbor's Garden

By C. D. Stuart

WHEN the honeymoon is over, then the humdrum life begins. After two blissful months I went back to my neglected bees, and the Magic Girl started on a conventional calling expedition. Already she had made friends of my neighbors and came and went among them like the bees, except that she gathered seeds, slips and whole plants where the bees took only nectar. Our own strip of yard was beginning to look like Joseph's "coat of many colors." One neighbor called it a "Vaudeville Garden."

The idea amused me greatly. Where had that sombre mite heard of ragtime and footlights? Her dresses were black, her eyes large, solemn and black, and she lived behind a dense funereal hedge of cypress in which black shadows lurked even on the sunniest days. Once I had thought to penetrate the recesses of that mysterious garden of hers, but a great spotted dog barred my way. I wished the Magic Girl would not return that call; but she only laughed knowingly and invited me to go along and ward off the spooks.

End men of the minstrels
(Photograph by A. B. Coldwell)

Inside the hedge a sun-flecked path beckoned through a lane of bloom to a secluded verandah; but we chose a by-path that careened gaily round a corner, through another cypress hedge straight into the oddest bit of landscape gardening—so colorful, its flowers totally unrelated, yet so harmonious in ensemble! Here was vaudeville, drama and grand opera all rolled into one. It was like a huge airdome stage set for the performance. Even the strip of lawn just beyond waited for the spectators to stretch themselves, and everywhere the hum of bees like the expectant buzz of an audience before the curtain rises.

The Devoted Heliotrope
(Photograph by A. B. Coldwell)

"Stay right where you are!" a voice called, and our mite of a neighbor emerged from the wings, her snowy hair, divested of its widow's cap, gleaming 'gainst the background of dark-green cypress. "I want you to know my actor friends."

"That's why we came by the stage entrance," replied the Magic Girl, advancing to meet our hostess, while I, marooned on a cunningly devised rustic seat at rear center of the stage, with groups of hollyhocks and sunflowers to the right and to the left of me, felt like the interlocutor in a minstrel show. Women are all like that. They get together and talk and leave a fellow sidetracked in some conspicuous position. Luckily I had the bees for company. They had followed us and were busy stripping off and carrying away on their legs in large quantities the make-up of those selfsame "actor friends," the cheerful coreopsis, a few faithful wallflowers and stocks still blooming, and rows of presumptuous snapdragons. Judging from the noisiness of

their wardrobes, the mimes had just acquired speaking parts. They were stationed in front of the minstrels, and the small black-garbed figure walked among them—a very stage manager. "These remind me of actors in a stock company," she was saying. "ready for any place assigned, and enduring. Think of stocks in June!"

"It's a game she plays," whispered the Magic Girl in passing. "They're real people to her."

"Asters are the housemaids of the flower theatre, the bachelor buttons are butlers—English butlers that say 'beggin' your leave' before every remark—and the candytuft, dear little children left to the care of servants," continued the pathetic wavering voice, like a phonographic announcement of dramatis personae; "but," indicating sections of blue and purple, between which lay a rainbow patch of color, "these represent the fine and true of the stage—the plays we heard when I was a girl; heliotrope, devotion; sage, domestic virtue; and verbena, family life and prayer—unity against evil. All that actors think of now-a-days, is 'putting something over,' no matter what."

The bees evidently agreed with her as to the standby qualities of old-fashioned flowers, and numbers of them flew regularly to extract their sweets.

My thoughts wandered from such out-of-date melodrama to the tufts of red clover that had industriously wedged themselves into corners—supers and stage hands, perhaps—and to watching the bees extricate themselves from the silken skirts of the chorus girls, I'd call 'em. Did you ever see a bee entangled in the gossamer threads of a poppy? A submarine in a net has nothing on it. It backs and turns, rolls over, gets dust in its eyes, and, finally, flies away with a Zip! Bang! that is alarming to encounter. And there were so many in that chorus—and so many daring bees.

"They're the ballet," explained our Theatre Fan. (So then I had guessed it nearly right.) "They're performing the dance d'heures. The red poppies are for the long, consoling hours of morning; purple, the fantastic extravagance of full day, and white, peace of evening and slumber. One can almost hear the music, slower and fainter——"

Mesembryanthemum Floribundum, a bee on every flower

She stood in a listening attitude as though to catch the strain of some well-remembered air. I shook off an uncanny feeling. I preferred the orchestra stationed in front of the flower-actors and spreading out to the reserved lawn-space, the orthodox position for orchestras—a solid mass of pink mesembryanthemum floribundum, that took to its maternal heart all the cares and petty jealousies of the actors, and absorbed their small voices in its blare of dazzling color. That's the sort of music for me! That and the hilarious applause of the bees buzzing round each performer.

Suddenly I realized the orchestra had been playing all the time. It continued to play. It played us out of the yard and up the street to our door, with the precision and dispatch of Alexander's Ragtime Band. That's my style of theatricals, especially the getting-back-home feature. But I could see that the Magic Girl loved the ballet best.

"Was she ever an actress, or just wanted to be?" I asked.

"Her husband was a noted English actor," she returned, absently, for in the eyes of the Magic Girl still lay the shadow of the hour dance that must end alike for all.

Chico, Calif.

My neighbor's path in June. (Photograph by A. B. Coldwell)

Propolis Poisoning

By Dr. A. F. Bonney

IN the American Bee Journal for May Dr. Miller discusses poisoning by propolis, and calls for a remedy

There are many plants the pollen from which cause disorders in the human, as rag weed, which is accused of producing hay fever; poison ivy, which does cause serious irritation, and "Missouri," to whom Dr. Miller replies, has symptoms very like those produced by this plant. In the deserts of Arizona I formerly encountered a plant called locally "The Sneeze Weed," the invisible pollen from which, even at the distance of a mile or more, if there was the slightest breeze, would irritate the nasal passages to such an extent that violent sneezing followed and persisted, but there was no further trouble.

There are other plants the pollen from which causes an irritation similar to what the ivy does, but they are so rare that I am inclined to

think that "Missouri" had a case of ivy poisoning through propolis gathered by the bees; however, it is very seldom that this can occur, and we may never hear of another case. As to a remedy, my experience with ivy poisoning has been rather liberal, and one of the very best remedies is a mixture of camphor and alcohol with an addition of 5 per cent of glycerine. The new U. S. P. formula for spirits of camphor must be used, made of full strength alcohol. The old formula contained 50 per cent water.

As an ounce of prevention is better than a ton of cure, in cases like this, I have prevented the Rhus poisoning (my patients were woodchoppers and others who were obliged to be in the woods) by having them smear the skin with a two and a half per cent carbolic acid (phenol) ointment. This serves a double purpose. The phenol is a powerful antiseptic, the vaseline of the ointment protects the skin.

If the camphor fails to give relief, "Missouri" might try a weak solution of sugar of lead.

Buck Grove, Ia.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Honey Cake Without Eggs

1 cup of honey.
1 cup of sour milk.
1 teaspoon of soda.
1 teaspoon baking powder
2 tablespoons of shortening.
2 cups of flour.
Salt and seasoning.

Take shortening and soda, stir together thoroughly, then add milk. Add baking powder to flour. This makes a good, large cake or a fruit cake by adding fruit and spices. It fits in well in conserving food these war times.

ALMERON S. EASTMAN,
Memphis, N. Y.

Dummy Hive

A 12-frame dummy hive made in a few minutes out of two 5-frame shipping cases.

The screened covers of the cases had, of course, been taken off when the bees were transferred into their regular hives, and all that remains to be done to make the dummy hive is to take off the screened bottoms also, knock off one side of each case, with the inside center cleat of each, and fasten the two cases together side by side by means of these same cleats, nailed on the outside of the case ends across the middles, so as to form handles as well as hold the the cases together. The slotted cleats on the inside of the end boards, which served to hold the bottoms of the frames in place during shipment, are to be pried off, as they take up the room of two extra frames, besides time when using the dummy. The bottom boards, with the screen removed, can be nailed on again if desired, thus completing a very light, handy holder for extra combs in the honey-house, or for use while looking over the hives in the apiary. Other sizes of shipping cases can, of course, be put together in the same manner.

MARGARET ULLMAN,
Highland Park, Ill.

Ladies' Bee Apron and Dress Combined

It is unnecessary to get stung when we can provide against it.

One of the inconveniences for beekeeping ladies is that bees climb up into their clothes and not only give them a disagreeable feeling of insecurity, but often expose them needlessly to stings. In order to be sure of one's self one must not be under the fear of having the bees crawl up under one's clothes.

Mrs. Odier, of near Geneva, Switzerland, who helps her husband in his apiarian operations, is very sensitive to bee stings, which cause her great pains and swellings, with fever for several days. It became necessary for her to devise a practical suit which could be readily drawn over any sort of dress, with elastics, closing around high shoes, and buttoning at the wrists and neck after slipping on the veil.

The accompanying photograph will illustrate better than an explanation how to make the bee-woman's apron-dress, which has given the desired services. The idea of it was due to Miss Berliet, a French lady apiarist. It is drawn on like trousers and is buttoned up and down the front like a clown's suit. A belt around the waist keeps it in place; it is practical in preventing the indiscreet invasions of the bees and also protects positively the clothes against soiling from the wood tar or ashes of the smoker, or from honey, wax or propolis. It may be made sufficiently becoming and attractive to suit the most fastidious taste.

Firm unbleached linen of good strength is considered the best for this purpose. If it is objected that the spots made upon it by the smoker or by propolis will show readily, on the other hand, a light-colored fabric is less apt to be objectionable to the bees, who attack dark clothes more readily. A light fabric is also cooler in the sun, and this is worthy of consideration.

When a lady beekeeper has but two or three colonies to care for, she may consider a plain kitchen apron as sufficient, but one cannot be too careful. "Prevention is better than cure."

PIERRE ODIER,
Celigny, Geneva, Switzerland.

Women's Help in Beekeeping

Apropos of Women's Help in Bee-

Bee dress used by a Swiss woman, Mrs. Pierre Odier, of Geneva, Switzerland

keeping. If only the personal pronoun of the successful beekeeper on the convention floor were **all.** But HIS honey, HIS business, and the way HE works the bees, are only symptoms. The disease itself is prevalent among beekeepers and common to other pursuits as well.

A woman is eager to help. A man takes that help as a matter of course, tolerantly if somewhat inefficient, and with hostility if she should be indiscreet enough to show too much intelligence, or if, perchance on some occasion she neglect to ask HIS advice on some minor point.

If she works too slow, she is lazy; if too rapidly, then she is trying to drive HIM; if she does her work with exquisite care, she is old-maidish, and if she puts it through in a hurry, she automatically acquires the title of a "slouch."

But woe to the woman who discovers anything whatsoever, either right or wrong, with HIS bees. Also woe to the bees. Whole colonies can perish (by starvation or disease) while waiting for HIM to make the discovery. Similarly the woman may close the entrances to weak colonies, only the next day to find them robbed out, because HE thought the bees needed more air, and that women were something of a nuisance monkeying around HIS bees.

Why should women work either for love or praise from their husbands? Why not work for the wage that is justly theirs? Or, better yet, the rich relative failing to depart this life at the psychological moment, why not appropriate a portion of the capital which (theoretically only) belongs to her by virtue of having helped HIM in its accumulation, and be an apiarist in her own right?

Perhaps (?) he would lend a helping hand occasionally, and perhaps she would be kind and well-bred, or, to sum it up in one word, JUST, and say "OUR bees."

A HELPER.

The Northeast Kansas Beekeepers' Association held a very profitable field meet at the apiary of O. A. Keene, Topeka, on the afternoon of April 18, 1918. Mr. E. W. Atkins, of the Entomological Department of the Extension Department, Washington, D. C., was present and gave demonstrations in handling bees, transferring, etc., and gave an interesting talk on general management of bees. A large and enthusiastic crowd attended the meeting, showing increased interest in beekeeping.

A. R. HOCKENSMITH, Pres.

Beekeeping at the University of Missouri.—The Department of Entomology of the University of Missouri has been offering courses in beekeeping for the regular University students for the past five years, and during the past two years special courses have been offered for agricultural students in the short winter course. The courses have been well attended and have attracted many men and women who have had years of practical experience in handling bees. Women, as well as men, select the course in beekeeping and a number of students on completing their university course have been pushing beekeeping in their respective communities.

Missouri was one of the first States of the middle west to recognize the possibilities in beekeeping and the importance of offering fundamental instruction in beekeeping along with other agricultural courses. Missouri, with more bees than any other State in the Union except Texas, offers some unusual opportunities in beekeeping. However, the big bee problems, wintering, pasturage, etc., have as yet been scarcely touched. With an army of men and women with scientific training in beekeeping distributed over the State to co-operate with this Department, the Missouri Apicultural Society and State and Federal Extension workers, the solution of many of Missouri's bee problems will be simplified. Every Missourian who keeps bees must be reached with fundamental information on up-to-date beekeeping.

The National.—The National Beekeepers' Association has in the past done much for the beekeeping fraternity. In the opinion of some it has made some mistakes. Because it stands for education and extension work in beekeeping, some will not support it—selfish motives. This retards the growth of the National little compared to the indifference of the majority of the rank and file of beekeepeers who overlook what might be accomplished by a strong organization.

In these times it is not necessary to mention the benefits of organization; we see it on every hand, trade, industrial, fraternal. Even the beekeepers are waking up, owing to Government extension work, and are forming County and State associations better than before. This seems the best way to make a solid foundation for a National organization and I expect in time to see all these affiliated with the National Association.

The National has no publicity department, it is only through the courtesy of the bee journals that it is possible to reach the beekeepers. To each of you that reads this, I say: Why throw the expense and responsibility of the National work on a few when your support would make an organization that would be able to do what even the most optimistic have thought possible? Forget the past, think of the future if you wish, but remember nothing is certain but the present and the present need of the National is members. Officers of local and State associations, you could help greatly. Some State Secretaries are sending in lists of new members each week, why not you? The annual dues to the National Beekeepers' Association are $1.50 per year. To become a member it is only necessary to send this amount to the Secretary-Treasurer or pay it to your local or State Secretary, who will send it on. You will get a reecipt by return mail. You will **NOT** get a year's subscription to the "Domestic Beekeeper, or any other magazine,

Fig. 1.—Class of agricultural short course students assembling hives and hive equipment in the insectary of the Department of Entomology, University of Missouri

included, as formerly. The National is not financially interested in any bee journal, but National members can secure, through the Secretary-Treasurer, any or all of the bee journals at 75c each per year. This offer is good for the rest of this year only. If you wish the Market News Service on honey, issued by the Bureau of Markets, direct from Washington, mention it when you send in your dues. FLOYD MARKHAM.

Beemen to Encourage Increased Production.—Beekeepers are quietly insuring to Wisconsin a source of sugar other than that secured from beets and sorghum cane by their encouragement of the beekeeping movement in many of the towns of Wisconsin. To further the development of the industry the following bee meetings are scheduled for June:

Wausau, June 1; Stevens Point, June 3; Grand Rapids, June 4; Marshtown, June 5; Owen, June 6; Ladysmith, June 7; Baron, June 8; Chippewa Falls, June 10; Eau Claire, June 11; Menomonie, June 12; Baldwin, June 13; Ellsworth, June 14.

G. H. Cale, a beekeeping extension agent from the United States Department of Agriculture, will attend each meeting, and will speak to Wisconsin beekeepers on the patriotic value of the industry and the latest methods of furthering the production of honey.

H. F. Wilson, of the Department of Economic Entomology of the College of Agriculture, will attend many of the meetings to lead the discussion on experiments in beekeeping out at the experiment station.

Fermenting Honey-A Practical Result

In our number for April, 1917, page 121, the editor told of a visit at the apiary of Mr. Irving Kenyon, of Camillus, N. Y., and of the peculiar trouble experienced by this practical and wideawake beekeeper. Mr. Kenyon's honey crops were subjected to a peculiar trouble. The honey fermented in the cells and often burst the cappings, being decidedly sour. We suggested that it might be due to some peculiar blossom. But Mr. Kenyon thought it due to a microbe within the hives, perpetuating itself from year to year. The trouble was so annoying that our friend resorted to the extreme remedy of transferring all his bees to sheets of foundation, in the spring, and melting all the old combs into wax. He now writes:

"You will remember our talk about honey souring. Well, I promised to report my success this season with the shake plan as used to cure American foulbrood. I don't pretend to know the cause of this trouble, but after 15 years' experience with it I am well satisfied that it is contagious and is spread by robbing. Not having a single colony that did not not show it in 1916, this year (1917), after shaking, I saw it in less than one-fourth of one per cent of the honey. I expect to shake again this season, and think that will clean it out entirely. I believe more of this trouble is getting a foothold than beekeepers are aware of.

"IRVING KENYON,
"Camillus, N. Y."

Preserving with Honey Instead of Sugar.—A lecture-demonstration to be delivered in various cities of Massachusetts during May and June. (If the demand for further lectures is warranted, it may be possible to engage Mrs. Hutchinson after July 1. Requests should be made to the undersigned.)

Mrs. Mary E. Hutchinson, of Wakefield, Mass., has been engaged to speak in various cities of Massachusetts on Saturday afternoons, on methods of preserving with honey; even 100 per cent honey can be used. It is generally believed that honey will not serve in jellies, but Mrs. Hutchinson demonstrates that 100 per cent in these is practical.

The first lecture was given in Worcester on May 18, at Horticultural Hall, at 2:30 p. m. At this time, also, there was a regular monthly meeting of the Worcester County Beekeepers' Association, and the regularly announced meeting of the Federated Massachusetts Beekeepers' Association, Inc., as guest.

In Springfield, Mass., it is arranged for Mrs. Hutchinson to speak on June 15, in the Mahogany room of the Municipal Auditorium. This meeting will be under the auspices of the Hampshire, Hampden, Franklin Beekeepers' Association, which will convene at 2 p. m.

Mrs. Hutchinson's future engagements are subject to arrangement. Inquiry concerning them should be made to the undersigned.

Mrs. Hutchinson is not only a beekeeper, but a most practical user of honey, in preserves and in many other ways. Her suggestions, which are plain, every-day and practical, are very helpful. Since sugar is not plentiful, nor is it immediately expected to be, honey can well be substituted in preserves. It is anticipated that Mrs. Hutchinson will be found most beneficial to her audiences. These lectures are entirely free and held by arrangement of the Massachusetts Agricultural College. All interested are urged to attend.

B. N. GATES,
Amherst, Mass.

Bee Literature in Our Local Libraries.—Many of the public libraries of our State and nation are fully aroused to the seriousness of the food situation, and with this in mind they are making every effort possible to provide literature on all phases of the subject of Food Conservation and Food Production.

One of the food articles we are urged most earnestly by the Federal Food Administration to conserve is sugar. The best way to save sugar is to increase both the production and the consumption of honey as a substitute for sugar.

The librarians of our State have been provided with a very excellent list of the best books and pamphlets on the subject of Bees and Honey, and they have been urged to secure all of the literature included in this list. In this effort the librarians would be greatly aided and encouraged if every keeper of bees would get in touch with his local library and would aid the librarian to select and secure the best literature suitable to the community, and would then take steps to advertise the bee literature which is in the library.

A practical illustration of the excellent co-operation that can be given by beekeepers was shown at a recent Food and Garden Show in the Public Library at Dixon. At this Food Show, Mr. C. O. Engel gave a talk on the subject of sugar and honeybees. He also contributed some excellent pamphlets which he had

Class of short course students at the University of Missouri getting practical experience in handling bees

gathered on bees and honey and made several excellent posters on the subject. This co-operation was greatly appreciated by the librarian, Miss Mary F. Wynn, and did much to arouse local interest in the literature which she had gathered in her library.

It is most earnestly hoped that those interested in this important subject will make an effort within the near future to get in touch with their local librarian and manifest by this interest an appreciation of the librarian's effort, and willingness to co-operate with the librarian in advertising this literature.

GEO A. DEVENEAU,
Library Publicity Director,
Urbana, Ill.

Are Bees Taxable?

I am writing to enquire whether bees are taxable. They tell me they can tax my bees, as they are personal property. LOUISIANA.

In most States bees are taxable, the same as any other personal property. The exceptions are States where a specific provision of law exempts them. In Iowa the law exempts ten colonies from taxation. The Iowa Beekeepers' Association has asked that this provision be repealed, since the specialist must pay taxes on his bees while the careless man with only ten colonies does not pay any taxes. There is no apparent reason why the man who invests his money in bees should not pay taxes on the same basis as though he owned cattle instead. The same rule applies generally.

Forcing Move of Bees

One of my neighbors has complained to the county attorney about one of my bees stinging her. They are trying to force me to move my bees. Only two swarms have clustered outside my yard in the three years I have kept them in the present location. There is no other convenient location to which I can move them. Can you tell me what to do about it? MINNESOTA.

A man has the same right to keep bees that he has with any other property. However, the public has some rights which he is bound to respect. If the bees are so situated that they are a source of danger and annoyance to the neighbors, they should be moved, otherwise not. The fact that one of the neighbors received a chance sting would probably not be sufficient cause to compel you to move, for it is very possible that there are other bees in the neighborhood, and one might get a sting even though your bees were moved away. You should build a high fence or other protection to turn the line of flight away from the highway so as to endanger those passing by as little as possible.

An occasional gift of honey to near neighbors will do much to insure the friendship of those near by and insure friends who will support you in case complaint is filed.

The beekeeper who lives in a city or town should take every possible precaution to so place his bees that they are as far as possible from walks and streets and so placed that the line of flight is above the heads of passersby.

This subject is fully discussed in chapter 10 of Productive Beekeeping.

Send Questions either to the office of the American Bee Journal or direct to DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

European Foulbrood

I am running for extracted honey. Have been keeping bees for twenty odd years, and have never had any trouble with bee diseases up to the present season. I now have the European type of foulbrood, and have about 50 colonies diseased. Last fall (September) I prepared the bees for this season, leaving approximately 40 pounds of stores on each hive, so now there is much honey with the bees. We have some nectar coming in, but our flow will not come until later. Now, Doctor, I have heard that you know how to handle this type of brood disease, and save the combs. Will you please write me how it can be done, and at the same time not spread the disease. There are plenty of stores in the brood-chambers. I do not know what to do with these combs of honey and dead brood. CALIFORNIA.

ANSWER.—It is quite possible to save the combs affected by European foulbrood, but it the disease is American foulbrood, the combs cannot be saved. The first thing in the treatment is one of very great importance, and that is to see that the colonies to be treated are *strong*. *Generally* they are weak, and must be made strong by the addition of brood or bees, or both, even if it requires doubling up several colonies to make one strong one.

The next step is to stop the laying of eggs for a period of ten days. If the case is a severe one, the queen is practically certain to be poor, and should be killed. Even if the case is a mild one, and the queen is poor, kill her, and plan to have another queen laying in her place ten days later. You can do this by giving a ripe queen-cell or a virgin just hatched, giving it at the time you kill the queen; or you may give a young laying queen ten days after killing the old one.

In any case, the cell, virgin, or laying queen should be of best Italian stock, for it is generally agreed that such stock is better to combat the disease than blacks or bybrids.

If the case is a mild one, with a good queen, merely cage her in the hive for ten days, and then free her.

The old combs of honey and brood are to be used just as if they were not affected, for the chances are not great that the disease will reappear, but I should not want to use such combs in perfectly healthy colonies, for there is a chance they might introduce the disease.

To sum up, make your colonies *strong*, stop egg-laying for ten days, and see that at the end of the ten days each colony has a laying queen of best Italian stock. You may count pretty safely on the success of such treatment, simply treat it over again.

Swarm Prevention

How will the following do for swarming colonies? I am working for comb honey.

Set a hive filled with sheets of foundation and one comb of brood on the old stand, shake most of the bees and the queen into this, leave only enough bees to care for the brood in the old hive. Now put the comb-honey supers on the new hive, on top of the supers put a frame with mosquito netting, in the center of which is a Porter bee-escape; on top of this the old hive with brood and bees, the cells being cut out as fast as the brood hatches. The bees trying to get out cannot go back, so the swarm will get all the young bees, and it will be in almost as good a condition as if it had not swarmed, except the building of combs. I don't know if it has been tried; most likely so, but I never saw it in the papers. INDIANA.

ANSWER.—The bees will make short work of tearing out the netting, and even if they didn't they would carry down black bits of comb from above to darken the cappings of the sections.

Foulbrood

From what I read, the foulbrood is not in the new nectar coming in, so it must lie between the queen and the nurses, presumably the queen.

Now, Doctor, is this disease caused by inbreeding? If so, would it not be a good plan to requeen every two years with Italian queens?

The black or native bees seem to have the disease the worst, so I have about convinced myself that it is caused by too close breeding. CALIFORNIA.

ANSWER.—No, the disease is not in the nectar. If you should change the queen of a diseased colony without for a minute stopping the egg-laying, the disease would continue. So you can hardly lay it to the queen. If you give a comb of diseased brood to a set of the best nurse-bees in the world, you may confidently expect the disease to spread itself cheerfully through the hive. So it would hardly be just to say that the fault was due to the wrong kind of nurses. No, the real culprit is a measly little beast of a microbe that is fed to the larvæ.

The worst case of inbreeding in the world will not result in foulbrood, unless that fatal microbe be fed to the babies; so changing the

queen would not be the thing unless it should be that the change should bring more vigorous and resistant stock; and in that respect a change of queen, might be important.

Drone-Cells—Brood

1. I understand that drone-cells are preferred by bees for storing honey, for the reason, as I suppose, that such cells permit easier ingress and egress and require less wax and labor to produce for a given area. Why, then, should not we use drone-comb for storage purposes for extracting?

2. Is the spreading of brood to be recommended in building up a colony? If not, why?

CANADA.

ANSWERS.—1. I'm not so sure about bees preferring drone-cells for storing honey. I know they prefer them at times for rearing drone-brood, and I've known them sometimes to go a little outside the brood-nest for the sake of rearing drone-brood. I don't think I ever knew them to go out of their way to store honey in drone-cells. I don't know, however, that there's any objection to having drone-comb in the extracting chamber, unless it be that sometimes bees are a little slow about filling honey in drone-cells, perhaps holding them open with the idea of having the queen lay in them.

(We much prefer worker comb to drone comb in the contracting super, as the queen sometimes gets into the super and might produce a large number of drones.—Editor.)

2. Some advocate and practice it. I haven't practiced it for many years, because there's too much danger of chilling brood. Besides, I'm not sure I gain anything by it, since of their own accord the bees start all the brood they can cover, and why should you want any more?

Swarming—Kinds of Queens

1. Is it better to let the first swarm come out, or to brush them by the brushed swarm plan?

2. Will there be any other natural swarms come out after the first natural swarm? If so, should it be prevented?

3. Why can more honey be produced by extracting than by running for comb honey? What is the usual price of pure extracted honey?

4. What is the difference between tested and untested queens? Is it that tested queens are mated and untested ones are not?

KANSAS.

ANSWERS.—1. If it be convenient for you to watch for the swarm, especially if you have not much experience, it is better to let the bees swarm naturally.

2. One or more afterswarms are likely to issue, and this should be prevented. When the prime swarm issues, hive it and set it in place of the old hive, setting the old hive close beside it, facing the same way. A week later move the old hive to a new stand 10 feet or more distant. There should be no more swarming.

3. The bees don't have to build fresh comb every time they store extracted honey. The usual price for extracted honey has been somewhere about 10 or 12 cents; now it is nearer 20 cents.

4. Tested and untested queens are both mated; untested are those which are sold before their young bees have hatched out, and it cannot be told whether they are purely mated or not; tested are those whose young workers show by their markings that they are purely mated.

European Foulbrood

1. Will zero weather kill germs of European foulbrood?

2. Will it be safe to feed sealed frames of honey taken out of foulbrood hive, although these frames have had no foulbrood in them?

3. Is there danger of foulbrood appearing in spring if all brood has been removed from hives in fall and sealed frames of honey put in their place?

4. Will it be necessary to boil chaff cushions and cloths used on foulbrood hives?

VERMONT.

ANSWERS.—1. No.

2. I think there is no danger in feeding frames of honey that have had no brood in them, if the foulbrood is European, but would hardly want to risk it in case of American.

3. That treatment was recommended for American foulbrood by the late W. E. McEvoy, and, so far as I know, the treatment is reliable. Just take away all combs after brood-rearing has ceased in the fall, and give combs of sealed honey from healthy colonies.

4. I think not.

Failure in Wintering

In May, 1917, I bought two hives of Italian bees (Nos. 1 and 2), Langstroth 10-frames, to begin with. Everything went well. July 14 I caught a swarm (No. 3) out of hive No. 1; July 16 a swarm left hive No. 2, but I could not get it, having entered into a hollow of an oak tree about 40 feet above ground, and it is not advisable for one 65 years old to get so high into the air. A second swarm out of hive No. 1 followed those absconders on July 18, however. I had the chance to catch another swarm out of hive No. 2 on the same date. That gave me four hives (old) No. 1 and 2 (new) No. 3 and 4, and I thought to be on the road to ssuccess. My good friends seemed to be happy and I did not disturb them except during the flow, when I took out some filled frames from hives Nos. 1 and 2 for storage. October 25 I opened hives again; found Nos. 1 and 2 in very good condition—plenty of bees and honey for winter food. Hive No. 3, plenty of bees but apparently not enough honey; so I gave them two full frames of honey out of above stores. Hive No. 4, not so many bees and honey; so I also gave them two full frames of honey. November 16 I placed all four hives in a shed with hinged roof, located on a terrace of a hill sloping south. I placed one foot of marsh hay on the wooden floor, then boards over that, and the four hives on this, close together. The bees kept flying until cold weather came. I then placed cushions filled with chaff around the sides and backs of hives, Alexander feeder under hives 3 and 4 and some hay over the hives. Before this I had put on top of each hive a queen-excluding board, then a piece of woolen carpet and thereon the cover. also contracted hive No. 4 with division board and placed some woolen carpet between the walls of the hive, The entrances of hives I closed with wire netting, 3 meshes to one inch, and then I placed the entrance blocks in front of this, leaving an opening of ⅜ inch. When the thermometer dropped to 12 and 20 below, I covered the hive with marsh hay on north and west sides. Then nature put two feet of snow on all this protection. I kept the entrance clear of snow by placing a slanting platform in front of each hive.

February 24, as the thermometer showed 65 degrees above at noon, I opened the entrances of the hive, taking away the blocks, and a few bees came out of hives Nos. 1, 2 and 3; they also carried a good many dead bees. Hive No. 4 didn't move up, in spite of my knocking. I then closed the entrances again with the blocks as before.

March 18, noon 68 degrees, I opened the roof of shed, took off the covers from the hives and found that bees in all four hives were dead.

The bees were in clusters between the frames; also in hive No. 2, on top of the frames. There was plenty of food in hives 1, 2 and 3, and even a little left in hive No. 4,

Can you tell me what the trouble was? Did I close entrances too tight, or should I have placed a super on top of the hives?

What would you advise to do to restock my hives? Buy bees by the pound, with queen, or nuclei? would you place bees into hives just like new swarms, or must you place queen separately into hive, and where, on top, or under frames?

WISCONSIN.

ANSWER.—It is not a very safe thing to make a guess about bees in all cases, but I don't believe I can be far out of the way in saying that the fatal thing in your program was reducing the entrance to three-eighths of an inch square. At the very least the opening should have been eight times as large.

If you cannot buy bees near home, and have to send south, it will probably be better for you to get combless bees by the pound, say in 2-pound packages with a queen in each package. A good way is to put the package of bees inside the hive beside the combs, allowing the bees to go upon the combs gradually, keeping the queen caged for a day or so.

(Bees by the pound are hard to get now. Better buy some swarms in your vicinity if you can.—Editor.)

Swarm Prevention

1. In destroying queen-cells to prevent swarming, how are we to determine whether the cell in question is to produce a queen to take charge of the hive, when the old queen goes out with a swarm, or whether it is a case of superseding?

2. How successful is the entrance guards as a preventive of swarming? Have you any objections to it?

IDAHO.

ANSWERS.—1. No one can tell by looking at a queen-cell whether it is intended for swarming or superseding. Moreover, so far as we can judge the mind of a colony of bees, it sometimes changes its mind, and what was in the first place intended for swarming turns out to be superseding, and vice versa. We can, however, make a pretty fair guess at the intention of the bees by attending circumstances. If swarming is intended, there will be a larger number of cells started than for superseding. There is no positive certainty as to the number for either, but if only 2 or 3, or even 5 or 6 are present, superseding is likely to be the program; whereas, for swarming there are seldom less than ten or a dozen, and it may run away beyond that. If cells are found at what is usually swarming time, or when other colonies are swarming, the probabilities are in favor of swarming; whereas, before and after swarming time, and at any time when little or no nectar is coming in, then it's a fair guess that superseding is intended.

2. A queen-excluder at the entrance does not in the least prevent swarming. The bees are just as sure to swarm with as without one. But it will hold the queen, and when the swarm finds the queen is left behind, it will return, and the beekeeper who is away from home when the swarm issues can do whatever is needed to be done at his convenience in the evening, or in the next few days. But if the colony is left without attention, in the course of a week or ten days, the first young queen will emerge, the bees will continue swarming and returning, and after sufficient time the old queen having been put out of the way, the young queen will begin laying without mating, producing only drones, and the colony is doomed. Except as mentioned, I would not think of trying to prevent swarming by any attachment at the entrance.

Hybrid or Italian Stock

On page 135, American Bee Journal, Kansas says he has a hybrid queen that produces pure Italian drones. I thought that I had learned that according to Dzierzon the drone is without paternal parentage, that a black queen mated with an Italian drone produced pure black drones, but mixed workers and queens. Having recently lost all my bee literature, together with my house and contents, by fire, I have nothing to refer to. But, Doctor, speak low, so P. C. Chadwick doesn't hear, because if I am mistaken I just know he will laugh.

MICHIGAN.

ANSWER.—You are right that a black queen mated with an Italian drone produces pure black drones, also an Italian queen mated with

a black drone produces pure Italian drones. Kansas says his hybrid queen produces pure Italian drones. Possibly you may say that a hybrid queen should produce hybrid drones. So she should if she contains mixed blood herself. But Kansas may say that no matter how pure the Italian blood in a queen, if she meets a black or hybrid drone, she cannot be sold for a pure Italian queen, and a hybrid queen of that sort will produce pure Italian drones. Fight it out yourselves.

Classified Department

Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS

FOR SALE—Colonies of extra fine strain Italian bees, with select tested queens, in new 1-story 8-frame single wall-hives, standard full-depth, self-spaced Hoffman frames, $10 each, f. o. b. here. The bees are free from disease.
Wilmer Clarke, Earlville, Madison Co.,N.Y.

FOR SALE—Italian queens from best stock; produce gentle, excellent honey gatherers; very prolific and unexcelled winterers; untested, 90c; 12 for $10; tested, $1.30; select tested, $1.75; extra select tested, $2.50; breeders,$5; pound packages, per lb., $1.50; nuclei, per frame, $1.50. Add price of queen wanted. Prompt deliveries. Special prices in quantities. Golden Queen Apiaries,
R. Kornegay, Jr., Mgr., Mt. Olive, N. C.

OUR BRIGHT ITALIAN QUEENS will be ready to ship after April 15. Untested, 75c each, $8 per doz., or $65 per 100. Safe arrival guaranteed.
Tillery Bros., Georgiana, Ala., Route 5.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
1Atf 84 Cortland St., New York City.

TESTED leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10 per doz.
A. W. Yates, 3 Chapman St., Hartford, Conn.

GOLDEN Italian Queens, untested queens, $1 each; six, $4.25; $8.25 per doz., 50, $32.50; $60 per 100. Tested queen, $1.50; one frame nucleus, no queen, $1.25; 2-frame, $2.25; 3-frame, $3; breeders, $5 and $10.
L. J. Dunn, 54 Broadway Ave., San Jose, Cal.

OUR select bred mated queens winter well.
Honeymoon Apiaries, Yakima, Wash.

FOR SALE—Warranted queens from one of Dr. Miller's breeders, $1 each; $10 per doz.; tested, $1.50 each; 2-frame nuclui without queen, $3; 3-frame $4.50; add price of queen if desired. Full colonies, 10-frame, $10; 8-frame, $9; in Danz. hives $8 each; tested queens in all colonies. We are sold out of package bees. Our yards are free from disease.
Geo. A. Hummer & Son,
Prairie Point, Miss.

FOR SALE—3-banded Italian queens, 55c; ten, $5. Circular free. O. C Wandrie,
Frazee, Minn.

FOR SALE—Pure Italian queens; goldens that are golden, and Doolittle's choice stock. Select untested (laying queens), 1, $1; 6, $5. tested, $1.50; best breeders, $5. For large lots write for prices. Pure mating, safe arrival and satisfaction I guarantee. J. E.Wing,
155 Schiele Ave., San Jose, Calif.

FOR SALE—Golden Italian queens that produce good honey gatherers; no foulbrood; select tested, $1.50; tested, $1.25; untested. 85c; 6, $4.75; 12, $9. After July 1, select tested, $1.25; tested, $1; untested, 75c; 6, $4.25; 12, $8. No bees for sale. D. T. Gaster,
R. 2, Randleman, N. C.

FOR SALE—Three-banded Italian queens; untested, one, $1; six, $5; twelve, $9. Tested queens, $1.50 each. Rob't B. Spicer,
Wharton, N. J.

PURE 3-banded Italian queens, as good as you can buy with money; no disease, and every one guaranteed. Write for prices. No more nuclei or colonies for sale this season.
J. F. Diemer, Liberty, Mo.

FOR SALE—Italian queens; untested, $1, or $10 per dozen. No discounts on quantity orders. Satisfaction guaranteed.
M. Bates, Greenville, Ala., R. 4.

NORTHERN BRED ITALIAN QUEENS—Ready May 1, each, $1; six, $5.
Allen R. Simmons, Claverack, N. Y.

GOLDENS that are true to name. Untested queens, $1; 6, $5; 12, $9; 50, $35; 100, $67.50. Garden City Apiaries,
San Jose, Calif.

THREE-BANDED ITALIANS ONLY—Untested queens, each $1; 6, $5; 12, $9; 50, $35; 100, $67.50. H. G. Dunn,
The Willows, San Jose, Calif.

QUEENS BY RETURN MAIL—Choice tested queens, reared last fall and wintered in 4-frame nuclei, $1.25; $14 per doz. Queens of this season's rearing, untested, $1; $9 per doz. We breed the 3-band Italians only and our strain is known for gentleness and honey gathering qualities. Every queen guaranteed. Never a case of foulbrood in our apiaries.
J. W. K. Shaw & Co., Loreauville, La.

FOR SALE—Fine Italian queens at 90c each, $9 per doz. Ready April 15. Safe arrival guaranteed.
T. J. Talley, Route 3, Greenville, Ala.

BOTH Italians and hybrid bees at $2.50 per pound with untested queen; 2 pounds, with queen, at $4.
Mrs. T. H. Carruth, Big Bend, La.

GOLDEN ITALIAN QUEENS—No better honey gatherers anywhere at any price. Untested, $1; tested, $2.
Wallace R. Beaver, Lincoln, Ill.

THE Sinking Creek Queen Introducing Cage; 5 years' test of absolute success; indispensable for introduction of valuable queens; also several queens can be kept in one hive in perfect harmony; small and works on the brood comb; especially adapted for queen breeders. Price 60c per doz., 2 doz. for $1; post paid. Sinking Creek Apiaries, Gimlet, Ky.

SWARTS GOLDEN QUEENS produce golden bees of the highest qualities; satisfaction guaranteed. Mated $1. 6 for $5; tested $2.
D. L. Swarts, Lancaster, O., Rt. 2.

FINEST ITALIAN QUEENS, June 1 to November, $1 each; 6 for $5. My circular gives safe methods; free. J. W. Romberger,
3113 Locust St., St. Joseph, Mo.

QUEENS—H. D. Murry's strain of 3-banded Italians; reared by the Doolittle method. Prices untested, 1 for $1, 6 for $5, 12 for $9. No disease. Safe arrival and satisfaction guaranteed. O. D. Rivers,
Route 4, Honey Grove, Texas.

FOR SALE—3-banded Italians; queens from best honey-gathering obtainable. Untested queens, $1 each; 6, $5; 12, $9. Safe arrival and satisfaction guaranteed.
W. T. Purdue, Ft. Deposit, Ala.

GOLDEN QUEENS that produce Golden workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1 each; tested, $2; breeders, $5 and $10.
2Atf J. B. Brockwell, Barnetts, Va.

GOLDEN and 3-banded Italian queens will be our specialty. We can also furnish Carniolians. Tested $1, untested 75c each. Bees, per pound, $1.50; nuclei, per frame, $1.50. Send your order for bees early.
C. B. Bankston & Co., Buffalo Leon Co., Tex.

THREE-Banded and Golden Italian Queens and pound packages in spring, from the Sunny Southland. Grant Anderson,
Rio Hondo, Texas.

THREE-BANDED Italians; untested queens in April and May, one, $1; 6, $5; 12, $9. Tested, $1.50 each One-pound packages of bees, $1.50 each; two-pound packages, $2.50 each. Add price of queens if wanted. If you want as many as 50 packages write for prices and discounts on early orders. Safe arrival and satisfaction guaranteed. No disease, and all queens purely mated.
Cotton Belt Apiaries, Box 83, Roxton, Texas.

SELECT bred, mated queens, $1 each, prepaid. Bred from the selected stock of eleven yards totaling over 1,500 colonies of bees run for commercial honey production. Only one grade of queens—no culls sold, $10 per dozen, prepaid. Honeymoon Apiaries,
402 N. Fifth Ave., Yakima, Wash.

HONEY AND BEESWAX

CASH paid at your bank for carlots and less, of comb and extracted honey.
Wesley Foster, Boulder, Colo.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

WANTED—White or light amber extracted honey in any quantity. Kindly send sample, tell how your honey is packed and your lowest cash price; also buy beeswax.
E. B. Rosa, Monroe, Wis.

WANTED—Comb, extracted honey, and beeswax R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill

WANTED—Beeswax at all times in any quantity, for cash or in exchange for supplies.
Dadant & Sons, Hamilton, Ill.

SUPPLIES

I have sold my bees and have a 4-frame automatic Root extractor for sale, good as new, for $35. Also 1,000 combs that will work in the Standard hive; will take 12½c each for them.
C. J. Barber,
Smithland, Woodbury Co., Ia.

FOR SALE—Surplus equipment, 40 unbound, 10-frame zinc excluders, 14 bound zinc 8-frame queen excluders, at 30c each; old-fashioned bevel edge 10-frame hives with metal covers, painted, complete with top and bottom but no frames, $1 each, with ten drawn combs, $2.60 each; large size solar wax extractor, old but painted and in good condition, $4; queen mating hives used by J. L. Strong, at your own price; 45 small Alexander feeders for nuclei, at $4 for the lot.
Frank C. Pellett, Atlantic, Iowa.

CLOSING OUT—Entire stock of bee supplies; send bill of goods needed for my prices; no catalogue. A few No. 2 4x5 sections, $4 per 1,000. H. S. Duby, St. Anne, Ill.

FOR SALE—One thousand beehives with supers; three-fourth dovetailed, balance halved together at corners and nailed both ways. Hoffman frames throughout. We will guarantee them to be sound and free from disease. Will sell all or any part at about half what new hives will cost. Apply to The Hyde Bee Co., Floresville, Texas.

WANTED

WANTED—4-frame honey extractor, comb pockets 12 inches wide.
Allenville Apiaries, Allenville, Ala.

WANTED—May, October and November, 1917, numbers of American Bee Journal and January, 1918, that are in good condition; will pay 10c each. Please mail carefully so the wrapper covers the entire journal.
American Bee Journal.

WANTED—White sweet clover seed; send sample; state quantity and your lowest price in first letter.
Dadant & Sons, Hamilton, Ill.

WANTED—Your old combs, cappings or slumgum to render into beeswax by our high steam pressure wax presses.
Dadant & Sons, Hamilton, Ill.

WANTED—Second-hand honey extractors; tell me what you have and price; also wax presses. W. D. Soper, Jackson, Mich.
Dealer in all kinds of Bee Supplies.

SITUATIONS

WANTED—Reliable, energetic and alert beekeeper, or student helper, in largest series of outapiaries in northwest. Work for extracted honey and all equipment and methods strictly modern. Give age, height, weight, experience, references and wages expected in first letter.
The Hoffman Apiaries, Janesville, Minn.

SITUATION WANTED—Experienced beekeeper, over military age, wants work in an American apiary. Address
Box 57, Blencoe, Iowa.

WANTED — Industrious young man, fast worker, as a student helper in our large bee business for 1918 season. Truck used for outyards and hauling. Apiaries located near summer resorts. Will give results of long experience and board and small wages. Give age, weight, experience and wages in first letter.
W. A. Latshaw Co., Clarion, Mich.

FOR SALE

FOR SALE—Surplus equipment, 6 2-story 8-frame dovetailed hives for extracted honey, nearly new, each with 16 drawn combs, at $6 each; 7 Buckeye double-walled hives, painted, nearly new, each with ten drawn combs, at $4.50 each; ten Champion double-walled hives, new, complete with ten drawn combs, each $5; no disease. Also several hundred surplus combs built on full sheets of foundation in wired frames, some Hoffman, some loose hanging, at bargain prices. If interested in new Root power-driven 4-frame extractor, Peterson capping melter or honey tanks, write,
Frank C. Pellett, Atlantic, Iowa.

FOR SALE—Full-depth 10-frame bodies filled with full-drawn combs, $2 each. Ideal supers, 5 11-16 inches deep, 10-frame full drawn combs, $1.25 each. The Hyde Bee Company,
Floresville, Tex.

FOR SALE—Cedar or pine dovetailed hives; also full line of supplies, including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

BEAUTIFUL FARM HOME—Improved, rich soil, well located, good buildings, 100 colonies of bees, up to date, best honey-producing location in State; not crowded; average for past seven years 105 lbs; 5 acres of ginseng golden seal, all ages, in fine shape. One-half artificial shade, one-half natural. Will sell a part or all. A wonderful opportunity; a bargain. Poor health reason for selling.
W. M. Penrod, Ronneby, Minn.

Crop Report and Market Conditions

In our report for this month we have taken advantage also of the May report of the Department of Agriculture which had to do with the losses, causes, condition of bees and condition of honey plants.

Of our reporters we asked the following questions:

1. Condition of bees?
2. Number of productive colonies as compared to 1917?
3. Condition of honey plants?
4. Outlook for crop compared to 1917.
5. Prices offered for honey?
6. Honey sold and at what price?

Condition of Bees

The Department Report gives the loss of bees as about 19%, which is higher than usual. Our reporters in almost all instances agree that the bees are hardly up to normal for this season of the year, though they are coming along rapidly. In the East they are behind the average, as is also the case in the central and north central States. Minnesota and parts of Michigan and Wisconsin are above the normal, as is most of Kansas.

The whole South is still under extra good conditions, though some reports are that the crop, so far, is not up to 1917. Texas, which has had two very unfavorable seasons, now reports the bees building up fast and that at last there are some prospects that there may be something to offset the small crops of the last two years.

In the whole of the West condition of bees is fair to good.

The summary of the Department is that condition of bees is about 86% of average and a little less than a year ago.

Number of Colonies

In spite of the large increase last year and of the large increase being made this spring, it is doubtful if there will be as many bees for the crop as in 1917, though the non-productive colonies changed into productive ones may bring the average up somewhat.

In all the territory east of the Mississippi and north of the Ohio there was but one report that claimed more bees than a year ago, most reports showing from 60 to 85 per cent as many.

The South shows, roughly, about 25% more bees than a year ago, and in the Rocky Mountain region there are a few more than in 1917 with about normal for California.

Again, the Department report shows 89% as many bees as May 1, a year ago, but the large amount of package increase, etc., since may make up a part of this loss.

Honey Plant Conditions

In the New England States plant conditions are fine, with a regret from some that there will not be the bees to gather the honey there should be.

Ohio and Indiana are average, as are also Michigan and Minnesota, with parts of Wisconsin, Illinois and most of Iowa and Michigan showing poor prospects, on account of the lack of white clover.

In the whole South plant conditions are fine and Texas generally is rejoicing over the prospects as compared with a year ago. The mesquite flow promises to be good. West Texas, however, reports poor prospects as compared to a year ago, and New Mexico may hardly be up to normal.

It is too early yet to judge of conditions in the Rocky Mountain region, although expectations are that plants will be normal except in Idaho, where it is hardly expected that the extremely favorable season of 1917 will be equalled.

California will do well if the plants range up to 1917, though in some parts they are much better.

Crop Prospects

Practically all regions except parts of Illinois, Wisconsin, most of Missouri and Iowa, West Texas and other scattered sections, claim that there will be a better average than a year ago, if the weather is favorable from now on. Many claims that the crop might be short if the drought were continued have been dispelled by bountiful rains since their reports were sent in.

The Department report shows plant conditions as being 87% as against 82% on the same date last year, but still far from the average of 92% over a series of five years. Conditions should improve, however, before the next Department report comes out.

Honey Offers

A year ago the beekeepers were being flooded with offers for their crop in advance. This year the offers are comparatively scarce, except for honey actually in hand. This is likely due to two causes. In the first place, beekeepers are not so keen to contract, but are waiting to get what price they can when the crop becomes available.

Secondly, the exportations of honey depend largely upon the availability of shipping space. We know of one offer being made by a foreign company for three or four cars of white extracted at around 20 cents f. o. b. steamer. This places the responsibility upon the shipper of finding space for his product before it can be sold.

Even though very little exportation should be made, the price of honey should still rule high, owing to the excessive demand for sweets at home.

Some offers made are as follows:

New York, 17c for white extracted.

Illinois, 15c for white extracted.

Alabama, 17c for extracted, immediate delivery.

Colorado offers from 12 to 15 cents on extracted.

Idaho, one offer of $3 per case for comb.

California offers on extracted ranging as follows: 12½, 13, 14, 15, 16½, 13, 15 cents.

Another series of offers are being made at a stipulated market price at the time the honey is available for shipment, such price to be governed by prevailing price on same size lots.

Honey Sales

Four cars of Texas honey have been sold at 17 to 17½ cents One sale has been made ahead in California at 12 cents for all extracted, and many more rumors of reported sales at a like price were sent in. Generally, the beekeepers are less inclined to sell than a year ago, and rightly so.

Nearly all beekeepers think that their honey should be worth at least 17 cents f. o. b. their station for white, and at least $4.50 per case for comb.

On the basis of past performances and with the expectation that shipping space will be easier to obtain as time goes on, is there any reason to doubt that producers will be able to obtain the prices as suggested above?

An Illinois Field Meet.—On Saturday, June 29, there will be held in the large grove of O. S. Biggs, at San Jose, Ill., a beekeepers' picnic and field meet. It will be held under the auspices of the Illinois River Valley Beekeepers' Association, who have extended an invitation to everyone possible to be present. Dr. Phillips has consented to attend.

Colorado Meet.—The Colorado Honey Producers' Association will hold a field meet and basket picnic at Longmont, Colo., Saturday, June 15, at 10 a. m. All interested in bee culture are invited to attend.

The New Jersey Beekeepers' Association will hold a Field Day in the apiary of G. Fred Jordy, one mile north of Flemington, on Wednesday, June 12, 1918. The program will consist of demonstrations by experts, such as grafting queen-cells, quick method of transferring, etc. Come; bring your lunch.

E. G. CARR, Sec.-Treas.

Statement of the Ownership, Management, Circulation, Etc., required by the Act of Congress of August 24, 1912, of **American Bee Journal,** published monthly at Hamilton, Illinois, for April, 1918:

STATE OF ILLINOIS, } ss.
COUNTY OF HANCOCK, }

Before me, a Notary Public in, and for the State and county aforesaid, personally appeared M. G. Dadant, who having been duly sworn according to law, deposes and says that he is the Managing Editor of the American Bee Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, American Bee Journal, Hamilton, Ill.
Editor, C. P. Dadant, Hamilton, Ill.
Managing Editor, M. G. Dadant, Hamilton, Ill.
Business Manager, V. M. Dadant, Hamilton, Ill.

2. That the owners are:
C. P. Dadant, Hamilton, Ill.
H. C. Dadant, Hamilton, Ill.
V M. Dadant, Hamilton, Ill.
Leon Saugier, Hamilton, Ill.
L. C. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
Jos. Saugier, Hamilton, Ill.

That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of the total amount of bonds, mortgages, or other securities, are: None.

(Signed) M. G. DADANT.

Sworn to and subscribed before me this 4th day of April, 1918.

H. M. CUERDEN,

My commission expires August 25, 1921.

Federal Farm Loan Bonds
Supply Funds To Finance Farmers
The First Year's Work

The bond of the Federal Loan System should command the attention of all investors.

The Federal Farm Loan System is the one agency of the United States Government which will bring to America month by month, year by year, and decade by decade through all the future a highgrade security, issued for the purpose of carrying out a great national agricultural policy.

The whole world looks for salvation to the American farmer.

The American farmer looks for financial help to the Federal Farm Loan System.

The Federal Farm Loan System seeks to enlist the wise investor in its movement to finance the farmer safely, soundly and conservatively, and thus save the world.

There are twelve regional Federal Land Banks, all operated under the inspection, examination and control of the Federal Farm Loan Board, a bureau of the Treasury Department at Washington.

The first of these banks to be organized received its charter March 1, 1917. Others were chartered immediately afterward. The farmers borrow through national farm loan associations. The first of these associations received its charter on March 27, 1917.

On March 31, 1918, associations had been formed to the number of 2808, or about four associations to every five counties in the United States.

About 56,000 farmers had joined these associations for the purpose of borrowing money on farm mortgages.

Loans amounting to over $160,000,000 had been approved by the banks and on over 30,000 of these loans money had been paid to the farmers to the amount of about $80,000,000.

And since March 31st the work has gone on—new associations have been organized; new applications have been made; new bond issues have been authorized.

And it will go on forever. So long as investors will buy Federal Farm Loan Bonds, and so long as farmers need money and can give security this work will go on. It is a mighty movement to put farming on a better financial basis. You can enlist in it to your own profit and to the good of the Nation by buying Federal Farm Loan Bonds.

Federal Farm Loan Bonds bear 5 per cent interest, payable semiannually, May and November, and in the language of the Federal Farm Loan Act, "shall be deemed and held to be instrumentalities of the Government of the United States, and as such they and the income derived therefrom shall be exempt from Federal, State, Munipical and local taxation." It will be noted that this exemption is complete. Interest on these bonds need not be included in income tax returns.

Such exemption from taxation in a five per cent bond constitutes an advantage hitherto unknown in American investments. These bonds are issued in denominations of $25, $50, $100, $500 and $1,000, and in either ccupon or registered form. They are due in 20 years and redeemable after 5 years.

Federal Farm Loan Bonds are printed in the Bureau of Engraving and Printing in Washington, and have the same protection against counterfeiting that is enjoyed by the currency in your pocketbook.

In the language of the Farm Loan Act, Federal Farm Loan Bonds "shall be a lawful investment for all fiduciary and trust funds and may be accepted as security for all public deposits." You can offer your banker no better collateral.

You can buy Federal Farm Loan Bonds at 101 and accrued interest. Order through any bank, trust company, broker or express agent, or write to any of the twelve Federal Land Banks:

Springfield, Mass.	Louisville, Ky.	St. Paul, Minn.	Houston, Texas
Baltimore, Md.	New Orleans, La.	Omaha, Neb.	Berkeley, Cal.
Columbia, S. C.	St. Louis, Mo.	Wichita, Kans.	Spokane, Wash.

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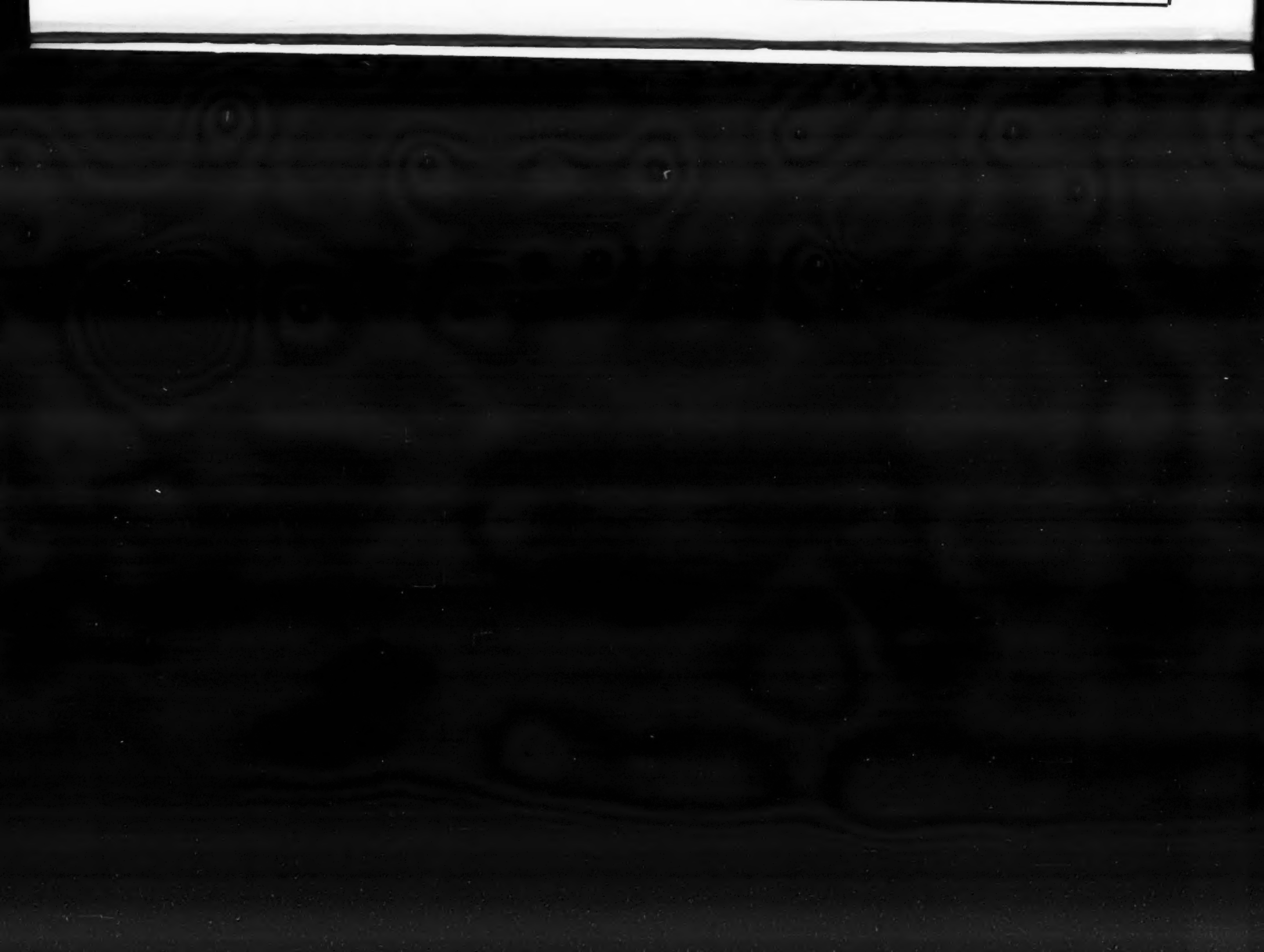

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What the Honey crop might be if everyone did his share.

Are YOU doing YOUR share?

Are you ready for the honeyflow when it comes? It may come with a rush. Have you extra hives for those swarms? You can't afford to lose them. Have you plenty of good frames and comb foundation? Have you a honey-extractor, uncapping-can, knives, etc.? Have you supers and sections for comb honey? If you haven't these now, don't wait any longer. The bees won't wait for you when they get ready to swarm. Send for our latest price list *today*.

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